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○  
THE SUBSTITUTE;

OR,

Entomological Exchange Facilitator, and Entomologist's  
Fire-side Companion,

FOR

1856—7.

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*Alere flammam.*

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LONDON:

E. NEWMAN, 9, DEVONSHIRE STREET;  
W. KENT & CO., 51 & 52, PATERNOSTER ROW.

MDCCCLVII.

MAR 26 1897

MAR 26 1897

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LONDON :

Printed by E. NEWMAN, 9, Devonshire Street, Bishopsgate, N.E.

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# THE SUBSTITUTE;

Or, Entomological Exchange Facilitator, and  
Entomologist's Fire-side Companion.

No. 1.]

SATURDAY, OCTOBER 25, 1856.

[PRICE 2d.

## THE SUBSTITUTE.

"THE Substitute for what?" So asks some reader of our title who has not seen 'The Entomologist's Weekly Intelligencer,' in which our advent was announced. We may be wrong—we hope we are; there may not be one entomologist that is not aware of the fact that we are appointed the *locum tenens* of the 'Intelligencer' until that luminary shall again appear on the horizon. The light our predecessor shed was, perhaps, small and flickering, as became so modest a satellite; still it was light, and our endeavour will be to keep up the glow while that little star is out of sight. This is our aim and object; but the path we have to tread is, by the force of circumstances, not exactly the same. We shall not have to record captures during the winter, or at least only in a very moderate degree. Now and then we hope some pupa-digger or moss-hunter will give us the results of his experience, and occasionally we trust that others, when looking over the captures of the summer, may find some gem that they overlooked or were unable to determine, at the time of capture, and tell us all about it. We wish to have more than this. Almost every collector has, during the summer, taken specimens of insects which he does not require

for his collection, and which he would be glad to give away to any one that wanted them. Many, perhaps all of them, are common, either generally or locally: no matter; there are always young collectors to whom such things are prizes, and the gift of duplicates may be the means of establishing them as collectors for life. We say *gift* advisedly; for although every one should make whatever return he can for specimens sent, yet the proper spirit is not to expect any return at all. We are sure that, in the long run, those who give the most liberally receive the most, often from sources the least thought of. We hate the *quid pro quo* system, although it would be well, as has been observed to us, if at times collectors would remember when they expect a rarity, and have something which they might send, to do so. From the old collectors we should like to see lists of insects for distribution, specimens that they have had by them perhaps for years, simply for want of knowing what to do with them. There must be many in this position; and we take it that it would be a real relief to get rid of what is to them so much lumber, and yet to others of priceless value. Well, all that collectors, whether givers or receivers, have to do, is to send us their lists: we will print them and distribute them: the trouble

is not much; it need only be done once, and we shall thus be the "Substitute" for lots of letters.

Visits to remarkable places, recollections of the past, and anticipations of the future will, we hope, form the subjects of some articles for the fire-side reading of our friends; and if any of our correspondents will send us such, or any weightier matter, we shall be happy to find room; indeed, at present we are not inclined to say what we should reject.

Finally, we beg to remark that 'The Substitute' is for the benefit of entomologists themselves, and it will be whatever they choose to make it. Of our own endeavours we will only say—

"'Tis not in mortals to command  
success;  
But we'll do more, Horatio, we'll  
deserve it."

We are credibly informed that a lot of foreign *Phlogophora empyrea* have been imported into Brighton for distribution as British specimens. If such a fraud be attempted we will publish the names of the culprits as a warning to others. We have reason to believe that foreign insects have been passed off as British by other parties, and we shall be only too glad to put a stop to such disgraceful proceedings.

We have before us the names of the members of the Sheffield Entomological Society, of which Mr. William Sheldon is President, and Mr. Francis Bradley is Secretary. We are happy to hear of the existence of such local associations, which, if amicably conducted, have much better oppor-

tunities of investigating the entomology of a district than a single resident or visitor. We hope to hear something of the doings of the Sheffield Society, which has only just emerged into light, although it was instituted in 1843.

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### TO CORRESPONDENTS.

---

*All communications to be authenticated by the name of the writer, and to be addressed To THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON.*

*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

*'THE SUBSTITUTE' will be continued for Twenty weeks, and will be forwarded weekly by post to Subscribers of Five Shillings, which amount may be sent in postage stamps to the publisher.*

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### DUPLICATES AND DESIDERATA.

---

*Glass Tubes in Exchange for Lepidoptera.*—I am a manufacturer of glass tubes suitable for the preservation of larvæ (I enclose one which has been three years in the tube). My object in addressing you is that I am forming a cabinet of Lepidoptera, and shall be happy in exchange for insects to forward glass tubes, as I have not a stock of insects that I could part with at present, and I do not wish any one to part with theirs without some return, and as this is the right season for larvæ



I think my offer may be opportune.—HENRY BAKER, 90, *Hatton Garden*; September 23, 1856.

*Larvæ of Lasiocampa Rubi*, &c., to spare.—During the last week I have taken larvæ of *Lasiocampa Rubi*, of which I shall have a quantity to spare. I have also a few duplicates of *Argynnis Aglaia* and *Abraxas ulmaria*. I am in want of the following:—

*Pamphila Comma*,  
*Erebia Cassiope*,  
*Liparis Monacha*,  
*Choerocampa Porcellus*,

or any species of *Trochilium*.—T. CAMPBELL, *Congreve Street, Birmingham*; September 22, 1856.

*Lepidoptera wanted*.—I beg pardon for trespassing on your time, but I must inform you that I am a working man, and a new beginner in Entomology, and the information I want is where I can purchase a few of the following:—*Sphinx Convolvuli*, Kentish Glory, Humming Bird Sphinx, Wood Leopard, Goat, Black Arches, Fox, Dark Tussock, Bath White, *T. Alveolus*, *S. Paniscus*.—JOHN COXON, *Sun Place, Soddam, Holbeck, near Leeds*; September 23, 1856.

[We do not recommend you to buy at all; wait a while, and you will probably take them yourself, or some one may give them to you. A collection is not to be made at once.]

*Mr. Proctor's List of Duplicates and Desiderata*.

#### DUPLICATES.

*Colias Edusa*,  
*Melitæa Artemis*,  
*Argynnis Euphrosyne*,  
    *Selene*,  
    *Aglaia*,  
*Vanessa C-Album*,

*Cynthia cardui*,  
*Satyrus Aegeria*,  
    *Megæra*,  
    *Semele*,  
    *Tithonus*,  
    *Hyperanthus*,  
*Polyommatus argiolus*,  
    *Artaxerxes*,  
    *salmacis*,  
    *Alsus*,  
*Erebia Blandina*,  
*Thanaos Tages*,  
*Smerinthus Populi*,  
*Anthrocera Lonicæræ*,  
    *Filipendulæ*,  
*Procris statices*,  
*Euchelia Jacobææ*,  
*Callimorpha Dominula*,  
*Euthemonia Plantaginis*,  
*Porthesia monacha*,  
*Orgyia fascelina*,  
*Phragmatobia lubricipeda*,  
*Eriogaster lanestris*,  
*Lasiocampa Roboris*,  
    *Trifolii*,  
*Odonestis potatoria*,  
*Saturnia pavonia-minor*,  
*Hepialus sylvinus*,  
*Cilix spinula*,  
*Notodonta carmelina*,  
    *dictæa*,  
*Diloba cæruleocephala*,  
*Pygæa bucephala*,  
*Acronycta Psi*,  
*Polia chi*,  
    *nebulosa*,  
    *flavocincta*,  
*Mamestra oleracea*,  
*Orthosia pistacina*,  
*Cerapteryx graminis*,  
*Agrotis vallisgera*,  
*Graphiphora plecta*,  
*Tæniocampa gothica*,  
*Agrotis putris*,  
*Lemuris Typica*,  
*Thyatira derasa*,  
*Scoliopteryx libatrix*,  
*Scopelosoma satellitia*,

Orbona rufina,  
 Lytæa umbrosa,  
 Caradrina glareosa,  
 Calocampa exoleta,  
 Euperia trapezina,  
 Gortyna flavago,  
 Cucullia umbratica,  
 Plusia chrysitis,  
 Hydræcia nictitans,  
 Ceratopacha diluta,  
 Phytometra ænea,  
 Mania maura,  
 Euclidia Mi,  
 Himera pennaria,  
 Crocallis elinquaria,  
 Odontopera bidentaria,  
 Ennomos illunaria,  
 Larentia bipunctaria,  
 Anaitis plagiaria,  
 Chesias spartiaria,  
 Abraxas ulmaria,  
 Strenia clathraria,  
 Acidalia Blomeraria,  
 Hydrocampa Nymphæata,  
 Pyrausta punicealis,  
 Eurhynpara urticata,  
 Botys verticalis,  
 Scopula olivalis,  
 Pionea margaritalis,  
 Halias prasinana,  
 Yponomeuta padella,

## DESIDERATA.

Nemeobius lucina,  
 Argynnis Adippe,  
 „ Paphia,  
 Vanessa polychloros,  
 Apatura Iris,  
 Limenitis Camilla,  
 Thecla Betulæ,  
 „ Pruni,  
 „ Rubi,  
 „ Quercus,  
 „ W-Album,  
 Polyommatus Corydon,  
 „ Adonis,  
 „ Argus,  
 „ Acis,  
 Steropes paniscus,

Pamphila comma,  
 „ Actæon,  
 Choerocampa Porcellus,  
 „ Elpenor,  
 „ Celerio,  
 „ Nerii,  
 Sphinx Convolvuli,  
 „ Ligustri,  
 Smerinthus Tiliæ,  
 „ ocellatus,  
 Any of the Trochilium,  
 Cossus ligniperda,  
 Zeuzera Æsculi,  
 „ arundinis,  
 Lasiocampa rubi,  
 Notodonta Ziczac,  
 Clostera curtula,  
 Liparis Salicis,  
 Euthemonia russula,  
 Lithoeia miniata,  
 „ quadra,  
 Arctia villica,  
 Leucania turca,  
 Apatela leporina,  
 Acronycta aceris,  
 Diphthera Orion,  
 Catocala promissa,  
 „ sponsa,  
 Brephos Parthenias,  
 „ Notha,  
 Euclidia glyphica,  
 Phigalia pilosaria,  
 Nyssia hispidaria,  
 „ zonaria,  
 Biston hirtaria,  
 Angerona prunaria,  
 Aspilates citraria,  
 „ gilvaria,  
 Hydrocampa potomogalis,  
 Stenopteryx hybridalis,  
 Agdistes Bennetti,  
 Pterophorus Pentadactylus,  
 „ Spilodactylus,  
 Alucita polydactyla.

—WILLIAM PROCTOR, JUN., *Durham*; October 6, 1856.

*The 40-Thecla Betulæ*.—I regret to say that all my good dupli-

cates of *Betulae* are disposed of. It was a butterfly that most of my collecting acquaintances wanted. I have had so many applications that I hope my correspondents will excuse me not answering each separately.—WM. HENRY DRAPER, *Chichester*.

## CAPTURES.

*Carabus intricatus*.—I found a specimen of this rare beetle on the 9th of the present month among grass on the edge of a pathway in one of our Devonshire Woods: it had either been trodden upon or wounded by a bird, as one of the segments of the abdomen was broken, but otherwise it is a perfect specimen.—J. J. READING, 42, *Gibbons Street, Plymouth*; September 22, 1856.

*Sphinx Convolvuli*.—A rubbed female was taken in a house in the middle of Plymouth on the 12th September.—IBID.

*Acherontia Atropos*.—I took a fine male specimen of this insect on the 19th inst., whilst beating elder-bushes for caterpillars, on a garden-hedge in Silverwell Lane.—FINLEY FRASER, *Bolton-le-Moors*; September 23, 1856.

*Larva of Acherontia Atropos*.—I had a larva of *Acherontia Atropos* brought to me two or three days ago by a gentleman who caught it at St. Lawrence. It is about to change.—R. F. TURNBULL, 4, *Chatham Place, Ramsgate*; September 22, 1856.

*Plutella annulatella*.—I took one specimen of this species whilst out "prospecting," near Conway, with Mr. Langcake. It was sitting on the bare rock which faces

the sea on Bangor New Road, about two miles from Conway, September 4th. Collectors in the neighbourhood should look for it a month earlier.—C. S. GREGSON, *Stanley, near Liverpool*, September 21, 1856.

*Phlogophora Emphyrea*.—This species has again appeared in this neighbourhood, and has been very closely sought after. I am happy to say that my friends Messrs. E. and G. Egles, of 32, Park Crescent (who discovered the species last season), have taken five specimens, and I have been still more fortunate, having succeeded in taking fifteen. These, together with one which has been taken by Mr. Thorncroft, of North Lane, are all the British specimens that have come under my notice, but I am told there are plenty of foreign ones in the town.—H. COOKE, 8, *Pelham Terrace, Brighton*; October 14, 1856.

## COMMUNICATIONS.

*Larva of Leiocampa Dictæa*.—I one day took fifty brown and green larvæ from the birch, fed them on birch exclusively, and reared six perfect moths from that number, all *L. Dictæa*. The information may appear trifling; but if trifles be not observed we cannot acquire a knowledge of the habits and manners of larvæ.—RICHARD CARTMEL, 13, *Williams Grove, High Park, Walworth*; September 23, 1856.

*Larvæ of Leiocampa Dictæa and Dictæoides*.—The only larvæ of *Dictæa* that I have taken in this neighbourhood were olive-brown or drab, each segment of various

shades, and appearing more rounded and distinct than in *Dictæoides*. The yellow stripe at the side of *Dictæoides* is not a constant character. I have taken specimens this year in which it was entirely wanting, and some in which it was interrupted. Has any one met with such?—T. CHAPMAN, *Bothwell Street, Glasgow*; October 11, 1856.

*Larva of Apatela Leporina*.—I have a caterpillar of *Apatela Leporina* covered with bright yellow hairs; a Yellow Miller. As most authors say the Miller should have a white coat, how has my specimen got a yellow one?—IBID.

[The colour varies in different specimens.]

*Food of the Lithosiæ larvæ*.—Respecting the food of these larvæ, I may state that last spring I reared a good many specimens of *L. rubricollis* from larvæ found early in the previous autumn. I fed these larvæ with moss off the trees, not lichens, and I saw them eat it. However, I dare say they might have preferred lichens, for they did not all feed up. As there is an idea that the larvæ hibernate, it is worthy of remark that all my larvæ that turned to pupæ did so in the autumn. Last spring I had a larva of what I believe was *L. aureola*, which fed for some weeks on sallow, but it subsequently died from being bottled up too tightly.—REV. WILLIAM HENRY HAWKER, *Horndean, Hants*; September 20, 1856.

*Food of the Lithosiæ larvæ*.—I think you are perfectly right in feeling sceptical as to the circumstance mentioned by me of the larva of *L. Griseola* feeding upon

plantain. I am well aware that the *Lithosiæ* feed upon lichens, and you are therefore quite justified in asking confirmation of such an aberration from their usual habits. You may, however, rely upon the fact being as I have stated it. When I found the larvæ at Halton I was a comparatively inexperienced collector. They were crawling on the ground, near the roots of a poplar. Not knowing what they were, and ignorant of their food, I put them into a box by themselves; and imagining, from the circumstance of their being on the ground, that they fed on low-growing plants, I gave them plantain, which they readily ate. There was no other larva in the box.—REV. J. GREENE, *Playford, Ipswich*; September 22, 1856.

*Notice! Stray Boxes*.—Eight or nine boxes of mine being in the hands of as many entomologists in various parts of the country, this is to give notice that the undersigned will feel much obliged by their being returned when quite convenient to the present possessors.—IBID.

*Hunt for the Eggs*.—Your kind insertion of my stray observations in the 'Intelligencer' induces me to express a hope that you will exhort your friends, during your hibernation, to turn egg-hunters. This is my plan for *Plumigera* and several other species. It beats pupa-hunting out of the field for a winter morning's walk. It requires no stooping and no tools, except a penknife to cut off portions of bark containing eggs. The sight of a spray of maple, with a dozen eggs of *Plumigera* sprinkled up and down it, is

attractive to other eyes besides tom-tit's.—REV. B. SMITH, *Marlow*; September 22, 1856.

*Is Acronycta Salicis a species?*—I may be about to tread on somebody's corns; and if people will grow such things they may expect to find them painful at times, especially when a clumsy Lancashire chap treads on them. At page 183 in Mr. Stainton's 'Manual,' I see he has copied an error from Guenée's great work, which the latter author was led into by Curtis. The larva figured along with the imago of *Salicis* in the splendid work of Curtis is the larvæ of *Menyanthedis*, as every Lancashire collector knows. I have had hundreds of them, but never reared *Salicis* from them. Both myself and my friend Mr. Greening have, however, reared *Salicis* from the larva of *Rumicis*, and are perfectly satisfied that it is nothing more than a dark variety of the latter species.—NICHOLAS COOKE, 6, *Wentworth Street, Everton, Liverpool*; October 8, 1856.

*List for Labelling.*—I have had printed on one side, for labelling, a list of British Lepidoptera, with the generic name prefixed to each species. It contains 1188 species, containing the *Macro-Lepidoptera*, *Tortricina* and *Crambina*. I shall be glad to send a specimen to any entomologist who wishes it, or a complete copy on receipt of eighteen stamps. I think it will be found a useful list by beginners. I have still plenty of exchange lists on hand, which I will send to any one at the rate of one shilling a dozen, post free. It contains 1100 species.—T. CHAP-

MAN, *Bothwell Street, Glasgow*; October 11, 1856.

*Holbeck Feast.*—The members of the Holbeck Entomological Society will feel obliged by the insertion of the enclosed paragraph.—“This feast commenced on Monday, with its usual amount of attractions. The most interesting “sight” got up for the visitors is that of the “Holbeck Entomological Society,” (a society composed entirely of working men), who have collected together in the School, at the end of the Moor, upwards of twenty thousand rare specimens of birds, butterflies insects, &c. The whole are arranged in a manner which gives pleasing evidence that the working classes can cultivate a taste for the beautiful when an opportunity offers itself. Amongst the specimens exhibited is a fine living locust, which was caught by one of the members a few days ago near Armley. The exhibition is open every evening during the week, and it has been, so far, well attended.”—JOHN U. WIGNALL, Secretary, *Holbeck*; September 27, 1856.

*The collection of Insects in the British Museum.*—How is it that the collection of insects in the British Museum is so meagre? I wanted to find the names of a number of insects I had with me, and could not find them, or if they were there they were so faded that I could not recognise them. The Emeralds, for instance, were white, and the Carpets were much changed. I think there is no excuse for not having a complete collection visible to the public, particularly as the science of En-

tomology is popular and interesting, and numbers of persons go there for the same purpose that I did.—H. B.

[All students can have access to the general collection in the Museum, one of the finest in the world, and they will meet with attention from the officers. Ask for the insect-room next time you go.]

*The destruction of Wasps.*—I am induced to communicate to you the method I have followed to reduce the number of wasps. It is well understood that it is useless to war against nature; still, by a little trouble we can keep different pests (as we call them) within bounds, in addition to the excellent plan of the Rev. J. S. Henslow. There must be many nests not discoverable every season. It is well known to those who study the science of insects, that the last young wasps that leave the nest are male and female (queens) only. Some few seasons back I observed, in the autumn, that a vast many of this tribe resorted daily to a giant Fennel plant, *Ferula* in botany, and that the whole of them were male and young queens; only it struck me that if I used the Tinea net to entrap the females, I should greatly reduce their number the following season. The males, as you know, have long horns, and do not sting, so that any gardener, unedified in insect lore, might greatly reduce the enemies to his wall-fruit, and save his ripe gooseberries—the titbit of the tribe. He would be sure to destroy fifty or sixty queens by his perseverance daily, with this little trouble. If this is of any use to you, or your readers, you are wel-

come to make it known.—THOS. FORDHAM, *Snelsmore Hill East, Newbury, Berks; September 27, 1856.*

*Notice.*—I understand that it is well known that a considerable number of foreign specimens of *Empyrea*, *Alniaria* and *Erythrocephala* have been introduced into this town, and will probably be shortly palmed off as genuine British specimens. I thought that by making this publicly known I might put purchasers of insects on their guard. The only specimens of *Empyrea* that I have heard of having been captured in this country this season, were taken by Mr. Cooke, Mr. Egles, and one by Mr. Thorncroft.—JOHN N. WINTER, 28, *Montpelier Road, Brighton; October 15, 1856.*

*Notes by an Old Collector.*—In this month's 'Manual of British Butterflies and Moths,' Carlisle is mentioned as a locality for many insects. Years gone by I was a resident of that town, and an ardent collector of larvæ; and in this paper I purpose naming the quarter where I captured the larvæ of some of the moths named, in the hope that collectors will not allow places of like character to escape their notice when searching for caterpillars. The ground to the north of Carlisle is open and bleak, portions of which are known by the name of "Mosses," with the name of the parish in which the moss is situated prefixed. They all possess the same distinctive features, the surface is plentifully covered with heather, and various species of birch, poplar, willow, alder, oak and shrubs here and there stud the ground. Amongst the heather and moss I

have taken the larva of the Emperor and Fox, *Lasiocampa Quercus* and *Anarta Myrtilli*, moths, and from the trees and bushes the Dark, the Pale, the Pebble, and Cockscorn Prominents, the Miller, *Leiocampa Dictæa*, the Chocolate Tips, the Puss, the Kittens, and the Dromedary; but to go on enumerating would be to name hundreds of different species which I have captured, or seen captured, on the mosses, and in the fields and woods surrounding Carlisle (more especially Barren Wood, of which more anon). I do not believe in the localization of a moth, in the sense in which that term is applied to moths. I am of opinion that the same species of moths may be found all over England where the same aspect of country prevails. A moth, in the course of an evening, will fly miles, constantly shifting and changing its quarters for the purpose of finding a proper support for its progeny, not depositing too many eggs in one place, so that some may survive the destruction incidental to caterpillars. If, in the course of its search, a moth crosses a country that is congenial to the growth of its caterpillar, it will deposit some of its eggs there, concealing itself through the day, and continuing its duties in the evening, but it will not deposit its eggs where there is not food for its caterpillar. Would a Silkworm Moth deposit its egg on the oak? Neither will a Cabbage Butterfly. Some time ago I read a statement, by a reverend gentleman, that he had put a lighted candle near his window, leaving the window open, and that a moth entered the room, being attracted

by the light; and as the moth was only taken in woods, and the nearest wood to his house was a mile off, the inference drawn by the entomologist was, that the light of his candle had attracted that moth a mile. I do not come to the conclusion that it was in consequence of the light that the moth left its natal wood; it is much more probable that the moth was roving in search of some tree or wood similar to its native place to deposit its egg, so that the longevity of some of its brood might be secured, and thus it came across his light when perhaps only a few yards off; if it was a male moth it makes no difference to my supposition, because the male seeks the female on the wing, and where the female goes the male will follow. I will illustrate my position, viz., that there is no localization in the strict sense of the word in reference to moths, and that the same species of moth may be found all over England where food and shelter are favourable to the growth and due development of its caterpillar. —RICHARD CARTMEL, 13, *Williams Grove, High Park, Walworth*; July 21, 1856.

[To be continued.]

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### EXTRACTS.

NOTES ON NOCTUÆ, FROM  
'L'HISTOIRE NATURELLE DES  
NOCTUELITES,' PAR ACHILLE  
GUENÉE.

#### *Bryophila.*

The larvæ of *Bryophila* are easily recognised. They are contracted; the head is small, retractile, shining or slightly rough;

the ordinary spots are warty, always raised, often shining, and as it were metallic; each only bears a single hair, which is, however, visible enough, though short. They feed exclusively on the lichens which grow on trees or on rocks, and like all other lichenivorous larvæ they only take their meals when the lichen is moist with dew. As soon as the sun has attained any height they hasten to regain their places of shelter. Those which feed on the lichens of trees retire among the bark or under the shelter of the branches; but those which are situated on stone walls would not thus find a sufficient shelter from the heat, consequently they spin in the cavities or little crinks of the wall, small cocoons, which they consolidate with pieces of lichen and mortar, and through which they make a hole to serve as a passage of egress. When ready for their transformation they construct a new cocoon, which they cover so cleverly with fragments of wall that I have seen on well-hewn stones, which appeared quite smooth, as many as ten to a dozen of these cocoons, which it was impossible to distinguish at the first glance, and to discover the whole of which required several hours.

The *Bryophilæ*, in the perfect state, are small insects with slender bodies: their wings are varied with brown, whitish and green, and imitate, in some degree, the lichens on which the larvæ have fed, on which the insects repose quietly during the day, and are almost as hard to be distinguished as their cocoons. The object of these singular resemblances is

easily divined, and nature has multiplied them in a thousand analogous circumstances, evidently in order to give defenceless insects the chance of escaping from enemies of all sorts. (Vol. I., p. 22.)

#### *Acronycta.*

Of all the genera of the Nocturæ this is certainly that in which there is the greatest diversity among the larvæ; yet the differences consist principally of the greater or less development of the trapezoidal warty spots. Thus, whilst in *Auricoma*, *Menyanthidis* and *Rumicis*, these are elevated into a hemispherical form, and furnished with tufts of hair, as in the *Chelonidæ*, they are much reduced in size, and flattened in other species, till, as in *Ligustri*, they only form small dots, hardly raised at all. The nature of the hairs also, with which they are clothed, varies considerably. Long and silky, though scattered, in *Psi*, *Tridens*, &c., they become thick and disposed in long diverging tufts in *Aceris*; they cover the entire surface of the caterpillar in *Leporina*; they are reduced to short brushes in *Rumicis*; in *Megacephala* there are only a few hairs; in *Ligustri* only one proceeds from each spot; and in *Alni* these hairs are swollen at the tip so as to appear clubbed. Yet the length of the hairs and the size of the trapezoidal warts are not the only variations we observe in this singular genus; even the form of the larvæ undergoes considerable modifications. Thus, whilst a large number are cylindrical, only a little flattened beneath, without any eminence, some, such as *Psi*, *Tridens* and



*Cuspis*, bear considerable humps on the fourth and twelfth segments; in some the head is small, and the anterior segments much attenuated (*Strigosa*, *Ligustri*), whilst in *Megacephala* the head and neck are disproportionably large. These modifications, however, do not correspond with the *facies* of the perfect insects, and the genera *Apatela* and *Semaphora*, which we used to separate from the larger genus *Acronycta*, have been completely upset by an investigation of the exotic species. The larvæ of *Acronycta* feed on all sorts of plants, and in all seasons, though principally in autumn: they remain always exposed, not seeking any shelter, and are easily found: they are generally rather sluggish. The perfect insects do not differ in their habits from other *Noctuæ*: they are often found at rest on the trunks of trees, near the spot where they have emerged from the pupa state. The species of this genus are closely allied; and it is necessary to observe the transformations with great care to separate species which are really distinct, and to unite the numerous varieties which have been named as distinct species by various authors. (Vol. I., pp. 41, 42.)

*Anthrocera Minos*.—I left Dublin on the 17th June, and took up my head quarters at Kinvara, a seaport town in the county of Galway, not many miles from Gort, and minutely examined all the ground between Kinvara and Tyrone for two days without meeting a single specimen of *Anthrocera*. At the beginning of my third days' search it became quite ap-

parent I was not in the proper locality, and I determined to go to Ardahan at once. I spent the better part of a day there without the smallest success; but on my way back to Kinvara I entered a large field, which was overgrown with *Arctostaphylos Uva-Ursi*, *Dryas octopetala*, *Sesleria cærulea*, *Gentiana verna*, and other plants, and, while stooping to gather the pretty *Dryas octopetala*, an *A. Minos* alighted quite passively on the flower. All my disappointment was now over, for in the brief space of three or four hours I collected a very fair stock of specimens. I observed that wherever *A. Minos* was to be found, there the plants that I have particularised were to be found also. One of its chief food-plants is *Polygala vulgaris* (the *Anthrocera* is called *Polygalæ* by Borkhausen), and this plant grows in the greatest abundance in all the fields here, and it seemed to be fed upon by its larvæ. At the same time, it is most probable that it feeds on various other plants, as, if we can judge from Schiffermüller and Denis's account, it would not seem to be very particular. "The caterpillar," say these authors, "feed on clover (*Trifolium*), *Veronica officinalis*, *Briza minor*, *Cynosurus cristatus*, *Genista tinctoria*, and *Thymus Serpyllum*; it is like that of a *Scabiosa*, but is pale yellow (not golden yellow as that), with two rows of twelve black spots. The cocoon is very convex, and of a brownish yellow colour; the pupa black-brown on the head, wing sheaths, and back, elsewhere yellowish. The fly appears in three weeks, and is on the wing from the end of June to

August in most parts of the continent of Europe." It appears about a fortnight earlier than *A. Filipendulæ*: at least, a dozen of the cocoons of the latter changed about fifteen days after I first took *Minos*, and with one solitary exception *Minos* was the only *Anthrocera* I saw while in Galway.—*Communicated by Mr. Percival Wright to the "Dublin University Zoological Association."*—*Natural History Review.*

**TO ENTOMOLOGISTS.**—Mr. FOXCROFT begs to return his sincere thanks to the Trustees of the British Museum, the Nobility, Gentry, and Clergy, and also particularly to the Members of the Entomological Society, for the patronage he has received for a number of years, and takes the liberty of informing them and others that he intends making another journey into Scotland for the purpose to discover what insects he can catch in the neighbourhoods of Balmoral and Castle-town in the summer of 1857, commencing from the 1st May till the end of September, and to enable him to carry out this plan he wishes to raise a sufficient sum by subscriptions of £1 3s., each subscriber to receive two specimens of all kinds of Lepidoptera that may be captured during the season, and box.

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SATURDAY, NOVEMBER 1, 1856.

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## CHANGE OF NAMES.

“WHAT’S in a name? A rose by any other name would smell as sweet.” This may be a true sentiment in many senses and on many occasions, but it is one the entomologist abhors. Without names insects become of little account to him, and, as Linnæus has said, “without names the knowledge of things perishes.” To the unscientific entomologist, the maker of a collection, the change of names constantly going on produces the same effect as if the insects had no names at all. One name is to him as good as another; and he cannot conceive why his old friends should have new titles. It would be better, no doubt, if we could so accumulate our knowledge that a name once given should stand for ever, but from the very conditions of our existence such prescient power can never be ours. We have no wish to justify all modern changes of nomenclature; yet something must be conceded to the necessity which the discovery of an immense number of species has laid upon scientific entomologists to class the additions under new generic heads, rather than to cram them under the old ones, which did well enough for the species known when they were instituted, but which cannot, with any propriety, be made to cover the variations of

structure since made familiar to us.

Unfortunately there is no canon for the construction of genera, arising out of a knowledge of the system of nature, so absolute that it must be followed; and so, every author, seeing only a little of the great scheme of creation, more or less according to his elevation, does that which is right in his own eyes, dissects or amalgamates the genera of his predecessors, and in his turn has his work subjected to the same treatment.

The progress of discovery, or the extension of our knowledge, having made necessary the multiplication of genera, all that we should insist upon is that they are not founded upon trivial differences, and that where nature has joined species together they should not be put asunder. A new generic name is bad enough for the unlearned, but the change of specific names is the most annoying; yet when it arises from the principle of the restitution of an old name, that principle is so sound that whatever temporary inconvenience may be caused to the multitude, who do not care to know the reason why, it must be upheld. But where the change is merely on account of some crotchet or individual dogma, it ought to be opposed as needlessly embarrassing both to scientific and unscientific men. There are already existing

quite sufficient difficulties, in the way of the adoption of a universal nomenclature, without adding new ones.

We have been led to this subject by an article in 'The Natural History Review' on the 'Manual of British Butterflies and Moths,' in which the writer is wrath with Mr. Stainton for departing from the generic arrangement adopted in Mr. H. Doubleday's List of British Lepidoptera, and demanding the reason. It seems to us that the reason is contained in the characters laid down for the genera: they may or may not be sufficient—that is another question—but there they are. We have our own opinion about the matter, but it is founded upon data widely different from those of the reviewer, who, as a specimen, gives his own reasons for keeping the genus *Lithosia* of Doubleday intact, namely, "that all the larvæ are lichen-feeders, all the insects (all at least we have met with) lie, when at rest, with the wings folded round the body, and in general form and appearance closely resemble each other." One who sets up as a judge of others, and can himself do no better than this, had better abdicate the judgment seat as soon as possible. We do not go into the merits of the 'Manual' at all; it is evident that the changes set forth are held to be objectionable whether they are right or wrong, simply because they are changes. To such persons as our reviewer represents science and system are quite supplementary; to possess a collection of insects, with names, is everything. It may be something new to the reviewer to hear

that a list, such as that he alludes to, without characters of genera or descriptions of species, is no authority at all for quotation, that to be the first of British Lepidopterists is not to be "the first of British entomologists," and that a 'Manual of Moths and Butterflies' is not a Manual of Entomology. We may again revert to this subject.

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#### TO CORRESPONDENTS.

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*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON.*

*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

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T. CHAPMAN.—List received with thanks.

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#### DUPLICATES AND DESIDERATA.

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*Duplicate Lepidoptera.*—I have a few fine specimens for exchange of *Cosmia fulvago*, *Luperina connexa*, *Pyrophila pyramidea*, &c., &c.—WILLIAM RODGERS, Gardener, Moorgate Grove, Rotherham; October 17, 1856.

## CAPTURES.

*Sphinx Convolvuli*.—At Crediton, on the 15th September, 1855, I caught a splendid female specimen of *Sphinx Convolvuli* flying before the flowers of the honey-suckle.—G. F. MATHEWS, Raleigh House, Pilton, near Barnstaple; October 10, 1856.

*Colymbetes fuscus*.—When I was walking on Blackbeath yesterday I saw a beetle fly into a little water in the road. I showed it to papa, who said it was *Colymbetes fuscus*, a water-beetle he had never seen fly.—LAURA A. DOUGLAS, 6, Kingswood Place, Lee; October 13, 1856.

*Larvæ near Rotherham in September*.—By kind permission of the proprietors of an extensive nursery I set to work in good earnest about nine o'clock one morning, and by three in the afternoon had the pleasure of bagging the following game:—*Apatele leporina*, *Acronycta Alni*, *Smerinthus Populi*, *Biston Betularia*, *Cerura bifida*, *Leiocampa dictæa*, both kinds of larvæ, green and brown, and for the first time *Leiocampa Dictæoides*. Most of the larvæ I found upon *Populus nigra*, *P. tremula*, and *Betula alba*.—WILLIAM RODGERS, Gardener, Moorgate Grove, Rotherham; October 17, 1856.

*Nepticula Septembrella*.—On the 19th inst., at the side of one of the paths in Darent Wood, I found a few plants of *Hypericum*, of which it is no exaggeration to say that every leaf was tenanted by a larva of *Nepticula Septembrella*. These larvæ were in all stages of growth, the mines varying in size from the merest indication

to the great discoloured final blotch. A search now of the *Hypericum* plants, in sheltered situations, would reward any one who would look for these larvæ.—J. W. DOUGLAS, Lee; October 22, 1856.

## COMMUNICATIONS.

[Continued from p. 9.]

*Notes by an Old Collector*.—I passed the "Jolly Sailor," near the Croydon railway line, in company with a brother collector named David Edwards: we went under the arch of the railway and turned to the right, crossing the fields towards Croydon, and leaving the railway on our right hand, we came to a portion of the remains of the Croydon canal. On the left side of the canal stood a bush of the willow. I said to my friend, look out for the larva of Kittens to-day, this region is highly favourable for their growth; here is a willow; from similar ones in Cumberland I have obtained scores. I struck the bush, and two beautiful caterpillars of *Cerura furcula* came into my inverted umbrella. We proceeded onwards and Mr. Edwards captured some, and I got three more. I was a quarter of an hour one day in the Wood, that stood in front of the Crystal Palace, at Norwood, and I captured the larva of the *Notodonta Dromedarius*, *N. Ziczac*, *Cerura furcula*, and *Pterostoma palpina*. I expected to find them, and did so, because I had obtained them from a similar situation in Cumberland, and so I should expect to find the same species of moth under the conditions requisite. Going along

the hills, between Croydon and Addington, I took the caterpillars of the Emperor Moth off the heather: it is a common insect on the mosses round Carlisle. Although (from a circumstance which I shall narrate) I am inclined to think that twenty years ago it was not known as a native of Cumberland. I was on Bowness Flow, a moss about fourteen miles from Carlisle, playfully tapping the tops of a heath bush with my stick, when the prettiest caterpillar I had then seen rolled to my feet: I was in ecstasies, boxed my prize, with a bunch of heather as food for my prisoner. In course of time my caterpillar underwent his transformation, and emerged from his cocoon a splendid male Emperor Moth. Subsequently I have taken as many as twelve caterpillars in one day, and have found them on all the mosses round Carlisle. I will relate a little gossip respecting the Emperor. My informant (now no more), a worthy man, with whom I have traversed the fields scores of miles,—Mr. Mark Noble, of Carlisle,—was looking for larvæ on Solway Flow, a moss about ten miles north of Carlisle, when he captured a female Emperor Moth: he put a pin through its thorax and stuck it in the crown of his hat. Being a hot day, and getting somewhat tired, he sat down on a stone and put his hat on the ground. At this time there was nothing to be seen flying. Presently a male Emperor came “bobbing around” the hat, then another, and another, until he counted six male Emperors flying round him at one time. Now, says Mr. Noble, they could not see through my hat, nor

inside of it, until they were flying over it; therefore, the deduction is that they smelled their captive mate in the hat, and thus were sympathising with her forlorn condition.

In searching for larvæ, when entering a field, I commence at a corner and go round the field, beating every bush and tree I come to, and with every new caterpillar I capture I put a leaf of the plant on which it was feeding in my box, so that I always know what food to give. From some birch trees that were growing in a hedge on the Kingmoor estate, near Carlisle, I obtained about thirty caterpillars of the *Leio-campa Dictæa* and *Dictæoides*. I took about twenty more that year from the birches on Houghton Moss, and out of that number I only reared six moths, and they were all the *Dictæa*. In other years I obtained both kinds of caterpillars, but could never rear a *Dictæoides*. There is no mistaking the difference in the caterpillars of the *Dictæa* and *Dictæoides*—the yellow line on its sides. But are they not male and female of the same moth? I tried for eight years to rear a *Dictæoides*, and failed, although I have had as many caterpillars of one as the other, and got them full grown in September, and as late as October. It is a highly sensitive caterpillar. I could not reconcile it to confinement, although I had a box three feet square. I used to tempt them with nice bits of fresh birch from the tree on which I took them, but they would not be persuaded. Those that were ready to change did so as rapidly as possible in order to escape from

their misery, while those that were not ready would stick on the branches pining after their state of nature, until it made you miserable to see them: you could almost fancy they were saying, sooner than be captives we will die first, which they did.—RICHD. CARTMEL, 13, *Williams Grove, High Park, Walworth*; July 21, 1856.

*A. Beginner's List of Butterflies, &c., observed at Bisterne, Ringwood, Hants, from October 15, 1855, to October 15, 1856, being his First Year of Observation.*

*G. Rhamni.*—February 9, middle of June. New brood, July 22. Was last seen in 1855 on November 6, so that it is the latest as well as the earliest of our butterflies. Although the male appeared February 9, I saw no females until March 28, and then their appearance was so striking, that I was led to the conclusion that either through the gallantry of the males, or the luxuriousness of the females, the former certainly left their winter quarters first, reminding one of the similar circumstance in the arrival of certain birds of passage. According to my short experience, however, the female (among *Lepidoptera*) is generally the first to emerge from pupa; but I observe that in the '*Intelligencer*,' the editor remarks the contrary with respect to *A. Paphia*. I found larvæ feeding on suckers of *Rhamnus frangula*, July 10. In the '*Manual*' it is described as dark green. It is green, irrorated with black, very similar to that of *P. Rapæ*. A bred specimen was in pupa from July 26 to August 8. This but-

terfly is certainly only single-brooded. What can give rise to any question on this point? They come out from hybernation in much better preservation, and look cleaner than the rest certainly, but I cannot believe in a distinct spring brood. It has a long life; but it is a muscular creature and hardy.

*P. Brassicæ.*—May 16. Second brood, August 5. These dates I should think are very late. This butterfly does not seem to me to be nearly so common here as in other more cultivated places. I could not breed it; for although I collected about thirty caterpillars, both in October, 1855, and last July, they were all and every one *Ichneumonized*.

*P. Rapæ.*—April 2. Second brood, July 15; third brood, September 18. Found larvæ in the beginning of July, which were in pupa from July 12 to 25. They have a thin orange dorsal line, not noticed in the '*Manual*,' but which is a conspicuous characteristic: one of those found at the end of August remained in pupa from August 25 to September 18, more than a week longer than the preceding brood: the first brood of course was in pupa the whole winter, so that the duration of the pupa state of insects is (as every one knows) quite indefinite, and depending on the temperature of the season: but so also, it would seem, is the number of the broods themselves inconstant, depending on the general temperature of the year.

*P. Napi.*—April 21. Second brood, July 18. Perhaps the commonest of the genus here, although I did not find the larvæ;

and cannot say whether there was a third brood.

*A. Cardamines*.—May 27, beginning of July. Not so very common. I met with only a single specimen of the female, and that not till June 27.

[*A. Galathea*.—Not an inhabitant of this neighbourhood. Found it in great plenty at Lulworth, Dorset, August 5.]

*L. Ægeria*.—April 23. Second brood, June 21; third brood, August 13. I am pretty confident here, also, as to the three broods, having marked the complete disappearance of each of the first two. The third was the most abundant, and lasted till the middle of September.

*L. Megæra*.—May 11. Second brood, August 1. I suppose the thick bar running obliquely from the middle of the inner margin is (as in *Pamphila* and *H. Tithonus*) indicative of the braver sex, the light ones being female. I saw two of the males fighting, as *A. Iris* is said to do.

*H. Semele*.—July 3. Seems to enjoy cloudy weather as well as bright.

*H. Janira*.—June 21.

*H. Tithonus*.—July 19. Some of the males have the white-centered black spot near the anal angle as well as the females; at least I have one that has these spots, bearing withal the masculine badge.

*H. Hyperanthus*.—July 10. Does not last nearly so long as either *Janira* or *Semele*, although later in appearance. They were almost gone by August. The last seen (on August 15) was very battered, while *Janira* was looking well on August 26.

*C. Pamphilus*.—May 30. Another brood, August 26. There is certainly scarce a day, from June to October, when *Pamphilus* may not be seen: he seems to love all summer months, as well as all localities. But I suppose there are several broods; I could only make out two, the first waning by August, and the second lasting till the middle of October.

*V. Atalanta*.—June 2 to beginning of July. New brood, July 9. I caught *Atalanta* on the 2nd of June in the depths of a wood: it was certainly one that had undergone hybernation. I saw it again on the 10th, 12th, and 18th, always in some wild place. I don't think any of the new brood come out before July 9. Found larvæ on June 21, &c., fourteen days in pupa.

*V. Io*.—March 26. New brood, July 30. Also exactly a fortnight in pupa.

*V. Polychloros*.—February 16. New brood, July 24. I have seen several this autumn as well as last. I am inclined to think this a good locality for *Polychloros*. It is a familiar butterfly; hybernated in the house; frequents places of common resort, lanes and gardens, like other *Vanessæ*.

*V. Urticæ*.—March 10. New brood, June 25. I see no ground as yet for supposing that this has more than one brood in the year, although the larvæ leave the egg at different periods, and so caterpillars are seen at the same time of all ages, yet this surely arises from the abundance of the insects, and they are still all of one brood.

*A. Paphia*.—July 2. A wood near here swarms with this magnificent Fritillary in July, and



exciting sport it is catching them. They even occurred now and then in our garden. I have one specimen of a greenish olive ground colour, with large spots instead of the usual curved streaks. Mr. Stainton kindly informed me that this is probably a female.

*A. Adippe*.—August 2. A single specimen only was captured; but I have seen other middle-sized Fritillaries about. Missed *Aglaia* altogether.

*A. Selene*.—June 26. A single specimen.

*A. Euphrosyne*.—June 6, &c.

*M. Artemis*.—May 30. In moist meadows. Found a nest of the young larvæ (as I suppose) on August 27, on the leaves of *Scabious*.

*Th. Quercus*.—July 11. I can corroborate the statement of the larvæ going occasionally underground. A larva, which I shook from an oak on June 9, descended into the earth a few days after, where it remained until July 11, an inch or so below the surface. Saw one flying about an oak as late as August 27.

*Th. Rubi*.—June 1. Chiefly in our garden. Did not see the second brood.

*C. Phlæas*.—May 16. Second brood, July 31. I am rather sceptical about the three broods of this insect: I observed a ? in the 'Manual.' The second brood is most abundant.

*P. Corydon*.—Ah! Corydon, Corydon! *quæ te dementia cepit*—to come into such a sandy desert as Bisterne! Took one on Aug. 4, and found the female at Lulworth.

*P. Alexis*.—June 3. Second brood, August 2. Very liable to variation.

*P. Ægon*.—July 2. By far our commonest Blue. *Ægon* and *Semele* (a curious union mythologically) reign together over these heaths in July, and not another butterfly can be seen, if we except Skippers. Hundreds of *Fidonia atomaria* complete the picture.

*P. Agestis*.—June 15. Second brood not seen.

*Th. Alveolus*.—May 23. Observed no second brood. Wings in repose erect, ? 'Manual.' I think this query well founded. I have watched the insect by the hour together, and never saw its wings assume an erect position, sunshine or cloud. They always rested horizontally. Just perhaps in the intense heat of the sun the little fellow would slightly raise and lower his wings alternately in "a sort of silent ecstasy," but would never put them bolt upright. When in a pill box, or under the influence of prussic acid, its wings I grant assume a vertical position; but so do the wings of the *Pamphila*, and many small *Geometrae* under similar circumstances.

[*P. Actæon*.—This I obtained on a very delightful trip to Lulworth Cove on a very beautiful day, August 5. The Skipper (a very insignificant looking little fellow) was very abundant, and seemed particularly fond of some yellow thistles; but the sun was exceedingly powerful, and the cliffs dazzlingly white; and so after catching two or three to satisfy myself that it was indeed *Actæon*, I found my eyes aching dreadfully, and my spectacles, and every thing else about me, suffused with perspiration, so, yielding to

the representations of my brother, who accompanied me, and who did not seem particularly struck with *Actæon's* appearance, I not unwillingly consented to bathe: and to all entomologists fond of a swim in deliciously strong and tinglingly salt water, I would recommend Lulworth Cove. Well, after dining on the cliff we again looked about us. I never saw so many insects together in my life. *Actæon*, *Ægon*, *Galathea* and *Filipendulæ* principally. The flowers were laden with them. I was merciful however, and did not make much of a raid among them. Being but a bad setter of insects, I never kill many, or otherwise perhaps I might have taken some to give away. The characteristic arch of light spots is very indistinct in the male of *Actæon*, but of course its colour and size readily distinguish it from *Linea*. I was rather surprised to find *A. Filipendulæ* in such vast numbers here, when they had long disappeared inland. I observed, however, the same thing with the Red Admiral last autumn. Insects seem to find the benefit of the sea air, and to live longer there, for I can hardly suppose that their coming forth is later. After a second bathe we returned homewards in the balmy evening with great contentment, nothing having occurred to mar the pleasure of the day.]

*P. Linea*.—July 17.

*P. Sylvanus*.—June 25. Only one brood. I am very sceptical indeed, in fact an utter infidel, as to the two broods of this Skipper. I saw none (yet looked carefully) before this date, and afterwards observed them continuously into

August. The 'Manual' says one brood in May, the other in August or (p. 64) end of July. According to my observation there were none in May, and they were almost gone by in August; but at the end of June, and throughout July, they were very abundant.

*Sphingina*.

*A. Trifolii*.—Turned up twice, July 2 and 15.

*A. Filipendulæ*.—June 27.

*Sm. ocellatus*.—Dug out of the earth in our garden under apple-trees, two pupæ of this Hawk, which came out June 5 and 11.

*Sm. Populi*.—Found two of the larvæ on aspen in our garden, August 22. They were very small: both came to an untimely end.

*S. Ligustri*.—July 18. Found two of the larvæ on a Privet hedge a mile or two off (the only one I've seen in the country), on August 20 and 22: observed also what I took to be the eggs (empty), about twenty together in an irregular bunch at the tip, chiefly on the under side, of a Privet leaf. I fed them chiefly on lilac, and they went down safely on September 13 and 17. The one first taken was then (August 20) very small, but they feed up with great rapidity.

*Ch. Elpenor*.—Found four of the larvæ, on August 15 in a marshy place, gorgeous fellows, with golden spiracles. Has not the 'Manual' omitted to mention the food-plant, above all others, of this larva, viz., *Galium palustre*. I tried willow-herb and fuchsia in vain, and so had to walk a long way every day to get *Galium palustre*. One of the larvæ was Ichneumonized by a colony of small creatures. The rest spun about

August 21. I found all four on, and feeding on *Galium palustre*.

*Ch. Porcellus*.—Met with two larvæ, August 4 and 18, both nearly full fed, on *Galium verum*. Both these *Chærocampæ* feed at mid-day, in the hottest sun. The pupa of *Porcellus* has two of the lower segments rasped like that of a wood-eater.

*M. Stellatarum*.—July 29. I did catch the first and only one I saw.

*Bombycina*.

*H. Hectus*.—June 24. Great numbers in a damp copse close to our garden.

*H. Lupulinus*.—June 22.

*H. Humuli*.—July 3.

*N. Ziczac*.—Took larvæ, Aug. 23, on aspen: they were young, and I thought them at first *Geometra*: spun about September 20.

*L. Dictæa*.—Took larvæ, Aug. 22, &c., on aspen: they were all green at first, with a red anal tubercle almost of the dimensions of a horn; they all turned to a clayey purple after a while, and the tubercle diminished; they are long larvæ in proportion to their width, and gradually lessen in bulk from the anus to the head. I did not recognize them for *Dictæa* until I read the beautiful descriptions of this and *Dictæoides* in the 'Intelligencer'; Mr. Logan's account especially bringing my own larvæ before my eyes.

*L. Camelina*.—May 28. Several at light. Found numbers of the larvæ on alder, oak, willow and sallow, in September. They turn up their heads over their backs, in a kind of defensive posture, even more than the larvæ of *Cassinea*.

[*D. Cæruleocephala*.—Larva on

Whitethorn, June 24. Large, bluish white, yellow dorsal and lateral lines, the dorsal line becoming a band on the third segment; black hair-tipped tubercles regularly disposed all over, (four on back and five on each side of each segment); head same colour as body, with two large black dots. Is this *Cæruleocephala*.]

*P. Cassinea*.—November 12, 1855. One came to light. Larvæ almost plentiful in the beginning of June.

*P. Trepida*.—Found the larva, July 27, which went into the earth a day or two after without eating. I took it at first for a *Smerinthus* larva, who had by some means got rid of his horn, from the oblique lateral stripes. Mr. Stainton informs me that the name *Trepida* is given to this insect from the larva being supposed to tremble when touched. I did not notice the peculiarity. I thought it a very sluggish creature.

*P. Bucephala*.—June 8. Larvæ in amazing numbers. Last year they were almost a month later than they are this, so that I took larvæ at the very end of October. Insects were exceedingly abundant in October, and even November, last year; but I can scarcely find any this autumn.

*Ps. Monacha*.—July 27. Flies slowly at mid-day. I bred one specimen.

*D. Pudibunda*.—May 16. Bred from larvæ and cocoons taken last October. The young larva (seen this year) is very pale.

*O. Antiqua*.—Oct. 7. Found a female inside a cow-shed laying her eggs on her cocoon.

[*S. Salicis*.—Do certain yellow-haired pupa skins in cocoons

on the bark and between the leaves of the aspen and willow belong to this moth?]

*P. Chrysorrhæa*.—Found the larva, which I described at the time as black, with long sandy hairs; interrupted dorsal and lateral lines orange red; at the interruptions quadrate white spots in rows, conspicuous towards the anus. But I omitted to imprison the pupa, and so the moth got among the *auriflua*, and I could not distinguish it.

*P. Auriflua*.—July 5. Bred in profusion. The minute larvæ, as they appear in autumn and winter (they are five times larger this year than they were last), are exceedingly beautiful. The tails of my perfect *auriflua* are of all shades, from brown to yellow.

*L. Stramineola*.—August 6. Flies in the evening. Found one by day resting on a Ragwort stem.

*L. Complanata*, July. *L. Complanula*, July 16. These I confounded until I read the August number of the 'Manual,' so that I cannot say whether *Complanata* is plentiful, but I should think it was, for out of the six I caught for *Complanula* two were *Complanata*. This is a rare place for lichens.

*L. Griseola*.—June 30. Came to light, &c.

*Gn. Rubricollis*.—May 17. This is the most abundant Bombyx, I should say, in this neighbourhood. At the end of October, 1855, the larvæ were actively rambling in every direction over the walls of the house and out-houses, and on every log and post in the place. What their food could be was a great puzzle; but many being full fed a good number were reared; and as we found

about fifty pupæ besides (quite accidentally when looking for beetles, we did not dig for them), the insect-room swarmed with them during May and June. The pupæ are generally found in very damp places. But abroad in any day in June! Why the whole place was alive with them, flying in broad day-light (the 'Manual' says all the *Lithosidæ* are evening flyers) everywhere, especially round the tops of trees. Their manner of flight is very peculiar and unmistakeable. When attacked they feign death, (so does *Complanula*, and according to 'Manual' *Irrorella*, so I imagine it is a common stratagem with *Lithosidæ*). A considerable number were crippled, although in a state of nature, owing, I presume, to lack of moisture. The soil here is so dry and sandy that many pupæ never come to perfection. This year, again, the larvæ are very abundant, and may be shaken from almost any tree in almost any numbers. The description of the larva in the 'Manual' is hardly satisfactory, as there are no distinct longitudinal lines.

*C. Mesomella*.—June 24. I suspect that this also is a day insect; but as I saw him fly but a very little way, he might only have been aroused for that period from his slumbers.

*H. Dominula*.—June 10. Found larvæ, November 5, last year, very small, on *Symphytum officinale*, and again in the spring at the same spot (for they are very local) a great number. Comfrey seems their principal food-plant; they were rarely on anything else; now and then on a nettle.

*E. Russula*.—June 26. Diur-

nal, and, as the 'Manual' says, fond of fern, &c.; but as fern here is everywhere, so was *Russula*. It also came to light. A correspondent of the 'Intelligencer' remarks this, and particularly notes the hour, 1 A.M., but here they came between 9 and 10 P.M., so that the hour makes no difference.

*A. Caia*.—July 3. This also came to light.

*A. Villica*.—June 18. Both these bred from larva.

*Ph. Fuliginosa*.—May 28. Larvæ abundant in autumn. Can there be a second brood?

*Sp. Menthrasti*.—May 30. Larvæ abundant in autumn. Came in numbers to light.

*Sp. Lubricepeda*.—June 21. Not so plentiful as the last. Larvæ spun this year about September 25.

*Eu. Cribrum*.—June 20. On wing in the evening. Very like a *Lithosia*.

[To be continued.]

## EXTRACTS.

**SAGACITY OF THE WHITE ANT.**  
—In nothing is the ingenuity of these little insects more remarkably displayed than in the expedient to which they frequently resort to cross a little stream on the sand beach after a shower of rain. Sometimes their train is cut in two by one of these little streamlets. To plunge into it singly, they would soon be swept away by the rush of the current. They come to the edge of the water, raise their antennæ, point them from one direction to another, as if they were taking a scientific view of all the dangers

of the crossing. They wander up and down the stream with the greatest uneasiness, and finding no other way to cross, form themselves into a compact knot or raft of a dozen or more, and launch themselves upon the stream. They have, by previous observation, made sure that they would strike a projecting point or bluff on the opposite shore, and not be carried by the current into the main river. The moment they touch the other side, they use their claws like anchors, and hold on until the whole company disengage themselves and march off in single file in the track of those that have preceded them. I have watched them for hours together, and have seen raft after raft of these little creatures go over in safety, when, if they had attempted to get across singly, they would all have been swept into the river.—*Wilson's Western Africa*.

**CURIOUS, IF TRUE.**—A curious, and we must add very apocryphal, circumstance, is said to have occurred in the silk factory of M. Garibaldi, at Cremona, which has caused some discussion among the Italian journals. It is positively stated that, in that factory, a quantity of silk-worms, instead of forming the cocoon as usual, actually wove a kind of silk ribbon, of the breadth of an inch, and the length of upwards of twelve feet. In the course of the denials and assertions exchanged on this matter, it has been elicited that a similar phenomenon, only on a much larger scale, took place at Alessandria in 1836, in the silk factory of Dr. Grillo, where the silk-worms wove a ribbon two inches broad and upwards of sixty

feet in length, part of which is now preserved in the Museum of Natural History at Turin.

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## BRITISH INSECTS.

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MOST of our British entomologists collect only British insects; and this is frequently made a matter of reproach against them. At home they are accused of a want of philosophy, and on the Continent it is believed that a kind of patriotic feeling induces them to restrict their collections to the insects of their own country. There is possibly some truth in both of these allegations, but in the majority of instances neither of them is true, the reason for the practice of English collectors being that they have neither time nor means to do otherwise. They have little time for collecting; frequently they are obliged to confine their attention to one Order, or even part of one, or else they have no means of providing accommodation for more than a very limited number of specimens. This is true of the bulk; the few exceptions must answer for themselves as to their pseudo-patriotism, want of philosophy, or whatever else may induce them not to extend their

studies beyond the limits of this sea-girt isle. There exists against this exceptional class a cause of complaint of much greater importance to the mass of our collectors, namely, their practice of paying extravagant prices for British insects, simply because they are British, for not only is far more than the intrinsic value given, but a temptation is held out to pass off foreign specimens as British, and even to introduce, as natives, species which have no claim to be so reckoned, and thus the very principle of collecting only British insects is rendered nugatory. We say nothing about the spirit which prompts to the possession of rarities at any cost, so that the end be obtained of saying of any one of them, "it is in *my* collection." Such a spirit has nothing to do with Science, nor is its possessor worthy to be reckoned among scientific men. As a principle there is no valid objection against buying English insects; indeed, without buying, there are many species that there is scarcely a chance of obtaining, but it would be better both for

collectors and collections if the *amor habendi* were kept within due bounds. Collectors for sale would gain more by turning the whole of their captures into money at moderate prices than they now do by selling a few at a fabulous figure, and collections would be enriched by the insects that, under the present system, perish in the collector's boxes.

But, after all, looking beyond the mere possession of species to a knowledge of them, there is nothing like hunting for and taking them oneself: far more will be learned in one day, by having the insects alive, than in a week's study of their dry bodies; indeed, we once heard one of the most learned Coleopterists say, "that he never knew a beetle until he had seen it walk across the table." And further, let the British collector console himself with the reflection, that although the most of the insects found in Britain are also common to Europe, the field of observation of their habits is everywhere very little worked. Here then, it seems to us, that English entomologists, hampered as most of them are with hindrances, have scope for employment quite within their means. Not only would the occupation be greatly pleasing, but the result would be of immense advantage to Science.

## TO CORRESPONDENTS.

*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON.*

*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

*'THE SUBSTITUTE' will be continued for Twenty weeks, and will be forwarded weekly by post to Subscribers of Five Shillings, which amount may be sent in postage stamps to the publisher.*

CARABUS.—Your attention is requested to the first two lines of the notice "To Correspondents." *Onthophagus Taurus*, *Vacca, medius*, *fracticornis*, *cænobita*, *Dillwynii*, *nuchicornis*, *nutans*, *ovatus*, and three species of *Bolbocerus*, are given by Stephens as British. *Odontaus* not. The *Pterostichus* is *erythropus*, Marsh. Dawson.

R. P., PARLIAMENT STREET.—The genera of the English water-beetles are figured in Shuckard and Spry's 'British Coleoptera delineated.' We know of no other work in this country; but if you require the names of *species* it would assist you but little. We shall be glad to hear from you again.

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## DUPLICATES AND DESIDERATA.

*Mr. Proctor's Duplicates.*—For goodness sake insert in your next



Number a notice to subscribers respecting my list of duplicates published last week, and prevent any further application for them. I have up to this time received exactly a dozen boxes of insects per post and railway, besides the trifling number of sixteen letters, all requiring specimens as early as possible. I have supplied those whose applications I received first, but my stock will soon be exhausted. Entomologists who do not receive an answer to their communications within ten days from this date, will please understand that I am unable to meet their demand.—WILLIAM PROCTOR, JUNR., *Durham*; *October 28, 1856.*

*Duplicate Lepidoptera.*—I have duplicates of the following:—

*Cidaria didymaria*,  
*Anticlea rubidaria*,  
*Harpalyce picaria*,  
 „ *ocellaria*,  
 „ *galiaria*,  
*Phæsyale psittacaria*,  
*Melanippe rivaria*, very fine,  
 „ *amnicularia*,  
*Emmelesia rivularia*,  
*Zerene adustaria*,  
*Ephyra punctaria*,  
 „ *poraria*,  
*Ania emarginaria*,

and a great number of other species; but not having many of them it is useless to draw a lot of applications for them. Those parties who have applied for any species mentioned above, and have not yet received them, may depend upon having them in due time: the only reason for the delay is that my boxes are not returned as soon as I could wish. Please not to forward any boxes when you apply for duplicates. I

should feel obliged if any one would write to me (enclosing a marked list of his requirements) that could forward me all, or any, of the following:—*Epione parallelaria*, *advenaria* and *H. sagittaria*.—E. S. NORCOMBE, 5, *Salutary Mount, Heavitree, Exeter*; *October 28, 1856.*

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### CAPTURES.

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*Deilephila Galii.*—On the 21st August *Deilephila Galii* was taken on the Sand-hills at Hedderwick Hill, near Dunbar, by S. Walker, Esq.—ALFRED O. WALKER, *Ches-ter*; *October 21, 1856.*

*Phlogophora empyrea.*—I understand that since the date of my last communication other specimens of *Empyrea* have been taken, but at present I am unable to give you particulars.—H. COOKE, *Brighton*; *October 26, 1856.*

*Phlogophora empyrea.*—It appears from the 'Substitute' as if only three collectors have taken *P. empyrea* this season. Permit me to send you a list of captures, taken to my knowledge, by myself and others in this locality, which can be verified by Mr. Foxcroft, who accompanied me on the 14th October inst., on which day I captured three *P. empyrea* and one *Agrotis Saucia*, and Mr. Foxcroft at the same time captured two *P. empyrea*. On the 17th inst. Mr. Howse and Mr. Hemmings captured one *P. empyrea* each. On the 18th inst. I was again successful in capturing one *P. empyrea* and two *Agrotis Saucia*, and Mr. Tidy on the same day took one *P. empyrea*, and Mr. Foxcroft on the 21st took one male *P. empy-*

rea. I should feel truly obliged by your inserting this statement in your next 'Substitute.'—GEORGE SMITH, 9, King Street, North Street, Brighton; October 27, 1856.

*Capture of Leucania Vitellina in England.*—August last was quite an interesting month to me. Ever since the middle of February had I been diligently searching, day and night, for Lepidoptera, but not one single species could I get hold of that was new to my collection: true I caught some few good insects, but nothing for my own cabinet. This state of affairs continued until towards the end of August, and certainly was sufficiently discouraging, when all at once things took such a change that within the short space of a week I took *Musculosa*, *Exigua*, and a species new to our list! Fancy having three such prizes on one's setting-board at one and the same time. It certainly was very jolly, and abundantly compensated for "no end" of the blanks and disappointments I had previously experienced. My "stranger" proves to be *Leucania Vitellina*, a species that appears in the south and centre of France in August and September, but is nowhere common. The locality in which I obtained this species was certainly rather a strange one; it was in my own little garden in the centre of this town. I saw the insect on the wing, and, without suspecting it was anything uncommon, made more than one attempt to catch it with my net, but failed: it went into a dense plant of *Epilobium*, and I could not drive it out. In accordance with my nightly custom I placed honey on such posts

and flower-sticks as were available, and in a few minutes I saw the moth reappear, and after hovering about for a short time it went straight to the nearest honey-bait and settled quietly. I then saw it was a stranger, and lost no time in boxing it: a little chloroform finished the business, and the insect is now in my cabinet, and numbered amongst my treasures.—H. COOKE, 8, Pelham Terrace, Brighton; October 26, 1856.

*Captures at Marlow.*—Last evening a specimen of *Dasycampa rubiginea* was taken here at sugar. It was evidently fresh out, but indulged in a flutter when in the pill-box, which has lessened its beauty. A fresh *Leucania crassicornis* was also taken the other day, with a few *Lota*, *Macilenta*, and *Libatrix*, and other common Noctuxæ of the season. *Defoliaria* is just making its appearance, to be followed by *Cassinea*, *Plumigera*, and *Borearia*.—REV. BERNARD SMITH, Marlow; October 25, 1856.

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## COMMUNICATIONS.

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[Continued from p. 23.]

*A Beginner's List of Butterflies, &c., at Bisterne.*

*L. Rubi.*—June 20. Bred. It is quite one of the entomological characteristics of this immediate neighbourhood, that the larvæ of this insect appear in marvellous numbers, completely strewing the ground: indeed a person walking across a heathy place here called the "Warren" must be cautious lest he tread upon them.

*L. Quercus.*—July 21. I dare say that this is more abundant

here than I suppose. I bred a female, but did not know her useful qualities. I found a larva exactly similar to the one that produced *Quercus* some time after, on July 27: it changed to an egg-shaped cocoon, exactly similar to the other, rather smaller (but the first was a female), and lo! and behold! it has not come out yet. The first changed June 10; this last one July 28! I hope it will come out next spring. Does this concern the *Las. Callunæ* question?

*P. Populi.* — December. At light.

*Cl. Neustria.* — July 18.

*O. Potatoria.* — August 1. Came freely to light.

*S. Pavonia-minor.* — Found a larva trundling along the path on the "Warren," August 15: I dare say it is common on the heaths. A poor man here had seen one casually, which he wanted to keep for me, and with that end, in entire simplicity laid it (as he said) on one side of the path. Of course he had the astonishment of finding it gone when he went again to look for it. He described it very well though, and compared the fascicles of bristles to the flowers of the heath.

*Cilix Spinula.* — May 16. Second brood, July 20.

*Enigma* — An astonishing *Chærocampa* larva has been a source of much amazement to me. I found it under a damp log in a wet place on January 19! It drew in its head and shoulders quite naturally, was of a dark colour, and a lively imagination might have discovered traces of eyes on the sides. I took him home (he was about the size of a full-grown

Buff-tip), and put him into a pot: he descended into the earth. After some time I looked again, and *quantum mutatus ab illo!* he was shrivelled into skin!

*Enigma.* — A beautiful larva, bombycoid, feeding in a damp place on *Iris Pseudacorus*, August 23, spun a few days after. Brown, hairy; broad dorsal and lateral lines red, black and white in chequer. Larger than *Acronycta Rumicis*, of which it reminded me.

May I be allowed here to express the grateful thanks of myself, and I am sure of many another beginner, to the author of the 'Manual of British Butterflies and Moths?' I have, I must own, taken every possible opportunity in the above memoranda to carp at the statements in the 'Manual,' but I have done so quite in love, for as every one must see "it amuses me and does him no harm." No: the only fault I find with the 'Manual' is, that it makes me wish for the speedy lapse of time; no sooner have I devoured one Number than I long for another. All honour, then, to the author of the 'Manual!' Were it not for that charming monthly visitor, how many would know and care no more about moths and caterpillars than they do now about — beetles! I wish some beginner in the metropolis, or some large town, would set on foot some scheme by which we all could testify our gratitude for the 'Manual' and 'Intelligencer' in a tangible and lasting way. It might incite some one "learned in the Staphylinæ," to give us a "Manual of British Devil's Coach-horses?" But what could have induced me to suffer

such very superficial memoranda as the above to appear in print in the 'Substitute?' If they do appear, please to lay the blame on the editor for admitting them. For my part I am satisfied that they will cause much pleasure to many beginners, for there are very few, I should think, who have not collected more species, or who could not show a better result of their first year's study of the 'Manual.'—LIMACODES TESTUDO.

*Explanations by Paterfamilias.*

No. 1.

"I put the jam-pots containing the remaining pupæ," &c., (Intelligencer, p. 2.)—My boy wanted me to tell him why Mr. Douglas kept his pupæ in jam-pots, and whether he kept large pupæ as well as small pupæ in jam-pots. Now if I understand the matter rightly (and perhaps you will kindly set me right if I make a mistake) it is only the pupæ of the smaller Lepidoptera that are kept in jam-pots, and none of those that require earth are so kept. The novel breeding-cage (of which I once heard that the idea was started by Mr. C. S. Gregson) is principally used for the leaf-mining species, though applicable also to many external feeders, and to the leaf-rolling and seed-eating *Tortrices*. Talking of *Tortrices* reminds me to ask when are we to have a book on that family: for my own part I can't see why the *Tineæ* should be so much patronised to the neglect of their elder brethren. Now, don't say I'm rambling again; and really you were too hard upon me before, poking fun at me in print; few people like to be caricatured in

Punch, and, except that it has no wood-cuts, the 'Intelligencer' has turned out a species of Entomological Punch. The jam-pots are ground a little at the top and covered over with a flat piece of glass so as to exclude the air. They form a very clean and simple sort of breeding-cage.

No. 2.

"Unfortunately for agriculture the new enemy belongs to that order of insects called *Diptera*, and the number of entomologists who attend to and study that Order is not numerous," (Intelligencer, p. 17.)—Here my boy completely posed me, for having first asked, "What are *Diptera*?" which was not a difficult question to answer, he next enquired, "Why don't entomologists attend to the flies?" Really, I declare I didn't know what to say. I felt very much inclined to tell him not to ask such questions, but then, I have always been in the habit of encouraging him to ask when he wanted information, so I told him I would give him an answer the next day. Having thus obtained a reprieve, as it were, I proceeded to ponder what answer I should give. It will not do, thought I, to say they are not often met with; nor will it do to say they are all so much alike, for the most superficial can see the difference between a *Syrphus* and a *Culex*. I cannot say they are difficult to set. Then I thought there is no one to help a beginner, but no, there is Mr. Walker, and, though I have not the pleasure of his personal acquaintance, I have always understood he was most ready to give any assistance in his power to the

enquiring student: in short, the more I thought about it the more perplexed I became. So I was obliged to tell my boy, after twenty-four hours cogitation, that the reason "why entomologists didn't attend to the flies" was that their tastes didn't lie in that direction. Perhaps you will say that this is no explanation; but I just send you the difficulty as it occurred, and the way I got out of it.

## No. 3.

"When a moth emerges from the pupa it is natural for it to remain quiet till its wings are fully developed," &c., (Intelligencer, p. 18).

—My boy wanted to know how he should always be able to tell whether a moth was fresh out of the chrysalis, for he had a sad misfortune in May; he took a Puss Moth off a willow tree and killed it at once, and then discovered that the wings, though grown, were not stiff, and consequently the moth was of no use. Now, in the first place, by putting your finger under the wings and pushing them out, you will soon find out whether they are limp or not; and besides, all insects when they emerge from the pupa have the body much swollen, and discharge a drop, or drops, of some liquid (generally dark-coloured) from the anus. If, on taking a *Noctua* or *Bombyx* from a paling, it makes a mess in the box, it is not then ready to be killed, and it should be kept for several hours before you offer to kill it: so that the greenhorns should notice

1st. Whether the wings are limp.

2ndly. Whether the body is swollen.

3rdly. Whether any liquid is discharged.

And if any one of these is the case, be cautious and do not proceed too hastily to deprive the insect of its life.—PATERFAMILIAS.

[To be continued.]

*Phlogophora empyrea*. — I beg leave to "substitute" a correct account of the capture of *Phlogophora empyrea*, besides those named in 'Substitute,' No. 1. Five other collectors have taken this species, not one of whom has the slightest idea of foreign specimens of *Empyrea*, *Alniaria*, or *Erythrocephala*, being in this town. Messrs. Cooke and Winter seem better informed. If such is the case, I should be particularly glad to know who has them, certainly not to palm them off as British. These sort of charges ought to be well authenticated, not insinuated. I annex a list of *Empyrea* taken, and by whom. In justice to myself and others I should be very much obliged if you would insert, as early as convenient, something to the above effect.

*Empyrea taken.*

15th Oct. Mr. Foxcroft, 2.  
 „ „ Mr. Smith, 3.  
 16th „ Mr. Howse, 1.  
 „ „ Mr. Foxcroft, 2.  
 17th „ Mr. Hemmings, 1.  
 18th „ Mr. Tidy, 1.  
 20th „ Mr. Smith, 1.  
 22nd „ Mr. Hemmings, 1  
 much worn. And two others by Mr. Foxcroft, are all that I am cognizant of. None of them are now for disposal. — JOHN HEMMINGS, 2, Bedford Buildings, Brighton; October 30, 1856.

## EXTRACTS.

NOTES ON NOCTUÆ: FROM  
GUENEE'S NOCTUELITES.

[Continued from p. 11.]

*Leucanidæ.*

This is so natural a family, that all the early writers on the group have themselves separated it. Yet, at first sight, it would seem to be divisible into two distinct families, especially were we to lay the greatest stress on the primary states of the insects. But, still, in taking this step we should meet some intermediate genera which would not fall under either absolute division. I will give the history of the two series.

The larvæ of the first series, or *Leucanidæ* proper, are of pale colours, but yet distinct, generally flesh-coloured or yellowish, and streaked with a multitude of fine lines, amongst which the ordinary lines are the most distinct. They are entirely cylindric, and the head, which is slightly flattened, is rather retractile. They all live on grasses, and seek no other shelter than the centre of the tufts or the dry leaves which are most in their reach. They enter the earth in order to change to a chrysalis of the ordinary form, shining, and pointed at the tip. The perfect insects generally participate in the pale colour of their larvæ: their fore wings are sometimes without any markings, sometimes with the ordinary lines slightly indicated; the stigmata are invisible, or reduced to one or two little dots; the wings are kept folded in a rather sloping roof; and the perfect insect takes shelter in the

herbage during the day; in the evening they fly tolerably rapidly: the two sexes are precisely similar in form.

The larvæ of the second series, or *Nonagridæ*, have particular manners, which necessitate modifications in their organisation. They live closely enclosed in the stems of *Cyperaceæ*, *Typhaceæ*, or *Gramineæ*, which grow on the water's-edge. Owing to this style of life they have a peculiar aspect. They are more elongate; their skin is shining; their consistence soft, excepting the horny plates, which are very distinct. Almost deprived of the colouring influence of light, they are dull, and as it were transparent, rarely with lines, and slightly marked. Moreover, like all internal feeders, they have the spots half warty and lighter than the ground colour. Their pupæ are placed in the very stems where the caterpillars have lived. They have the abdominal portion very prolonged, but more obtuse than those of the preceding section. There is also some difference in the perfect insect: the *stigmata* have a tendency to reappear, though the lines remain mostly obliterated; the wings form a flatter roof, but the insects do not differ in their habits; the body has an extreme tendency to turn greasy, as is the case with all species the larvæ of which feed in the interior of vegetables. The two sexes are habitually very different; the female, besides being much larger than the male, is generally of a paler colour; the abdomen is disproportionately long and large. They lay an unusual quantity of eggs; hence the specimens are generally very abundant

in the localities (always rather restricted) where they occur.

The species of the family *Leucanidæ* are very numerous; and as their markings are often *nil*, the differences which separate them are often insignificant. Hence, they are very difficult to study. This study is, besides, rather unsatisfactory, because it relates to the least ornamental as well as to the least varied of all the Noctuæ. However, we do not see that authors have neglected this group more than others, and there are even entomologists who have a sort of predilection for it, which is explained by the pleasure we derive from overcoming difficulties. (Vol. I., pp. 65, 66.)

#### *Leucania.*

The larvæ of *Leucania* are very closely allied to each other, and one needs all the experience that one can acquire from long practice in breeding larvæ in order to distinguish them; even the most skilful is often deceived. Not a single European species, to my knowledge, is green: all are of a dull whitish, or of a reddish or yellowish gray, with the ordinary lines continuous and well marked, and between these lines a number of other lines, or supernumerary lines, often resulting from the agglomeration of brown or reddish atoms. These are nearly all the markings, though sometimes the subdorsal line is marked with black spots: the spiracles are often entirely black or brown. These larvæ feed exclusively on grasses, and we find them on those which grow with their roots almost in the water, and on those growing on the most arid hills. Those

grasses which form thick tufts afford a natural shelter, in the midst of which the larvæ pass their lives, only climbing to the extremity of the leaves in the evening or at night. Those which do not feed on grass growing in tufts have to seek a shelter among dried leaves. Some of those which feed upon aquatic grasses take shelter in those stems of which the top has been cut off or accidentally broken. They penetrate till their progress is stopped by a knot, and their excrements, which fill a portion of these tubes, testify that they only quit these hiding-places when obliged to seek food. This retreat, if it does not protect them from prying Ichneumons, completely shelters them from the attacks of birds; but that is not its only benefit: they make use of it when the period arrives for their metamorphosis. In fact, they do not enter the earth like their congeners, and they content themselves with spinning above and below them a silken diaphragm mingled with gnawings of reed. (Vol. I., p. 70.)

#### *Nonagria.*

This is a genus much more remarkable for the habits of the larvæ than for those of the perfect insects, although these latter are well deserving of attentive study. These larvæ spend their whole life, from the time they quit the egg till the perfect insect appears, in the interior of stems of aquatic plants, eating the pith and never touching the leaves. The small larvæ, when quitting the egg, generally live in companies on one stem, and at the top where the part to be perforated is

soft in proportion to the weakness of their mandibles; but before long they separate, and each of them proceeds to take possession of a separate stem or portion of a stem. They enter by piercing a hole at the lowermost portion, which they immediately cork up with gnawings; then they rise by degrees in the tube as they consume the pith, and the excrement tends to fill the empty portion. Should the plant be one of the *Gramineæ*, and consequently should the progress of the larva be stopped by a knot, it tries at first to pierce it, and, when it finds that this is impracticable, it constructs a circular opening hardly of the same diameter as its body, by which it goes out without being at the trouble to close the opening: it then recommences its operations, either above the knot or in a neighbouring stem, and thus continues till it has attained its size. When on the point of changing to a pupa, which happens in the stem itself, it again forms an opening, but this time it only removes the inner substance of the stem, and leaves intact the external pellicle. The hole is no longer of the same size, and instead of being rounded is decidedly oval and much larger. One can see the object of this difference, because the perfect insect in quitting the stem would require a larger space, and having no mandibles ought only to find an obstacle proportioned to the efforts which it can make with its head. As to the foresight which governs these dispositions, it originates in that astonishing faculty which we qualify rather contemptuously as instinct, and on which reflection calls forth inexhaustible admira-

tion. After having made all these arrangements, the caterpillar has only to consider how to place itself most conveniently to undergo its transformation. It spins a diaphragm of silk and gnawings beneath it, and a second, similar to it, above it. Sometimes it even forms a complete cocoon formed of silk and gnawings, wherein it changes to a pupa. This is always placed vertically, but the head is sometimes placed uppermost, sometimes downwards; in the latter case the hole for the exit of the perfect insect is at the bottom. M. Rambur has noticed instances of pupæ driven out of the stem by the action of vegetation, when they had undergone their change at the summit. When the *Nonagria* arrive at the perfect state they lose all the peculiar interest which attaches to their early stages: they then fly, as all other *Noctuæ*, at dusk, among reeds in moist places. The females, furnished with an abdomen especially long and large, remain nearly motionless all their lives. The males, much smaller and generally more lively coloured, have a tuft of diverging hairs at the extremity of the abdomen. (Vol. I., pp. 99, 100.)

#### THE STUDY OF ENTOMOLOGY.

If the dignity of a study were in proportion to the magnitude of the object studied, Entomology would be properly regarded as a trifling pursuit. The conceit of youth may be excused when the little vaunts itself over the less, but we are at a loss to conceive why a man devoted to one pursuit should sneer at the application of equal powers of mind to subjects



in which he has no interest, because the objects of it are of small magnitude. A man who can find no better reason to justify his contempt for the study of insects, must have so much more conceit than decent sense, that the dignity of argument would be offended, and its purpose perverted by an attempt to convince him that he judges foolishly.

A prejudice, however, does exist in the minds of some intelligent men against the study of insects, because they identify the the entomologist with the collector, an error we need not take the trouble to expose. But there are other objectors who, if they were honest to themselves, would find that their assumed contempt is in fact a dissatisfaction arising from ignorance, and a consciousness that there is much to be observed which they never saw, and discoveries to be made for which they have neither the aptitude nor the preliminary information. To other persons insects are unpleasant or repulsive objects unless they present themselves in delicate forms and court-dresses. By such fastidious people the little creatures always and everywhere about them, are supposed to have no mission in the world but to annoy and irritate them, or to exercise some insatiable malign power over man and vertebrated animals destructive to their comfort and injurious to their health. But if this were true, it should be a motive to the study of their production and habits. Personal interest and benevolence should unite to encourage an examination of the physical structure and modes of life of such insidious

enemies. But that which is most common and the most formidable objection to the study of Entomology is the necessity of an acquaintance with a systematic classification embracing 400,000 living forms. This objection, or rather impediment, to the study, is more fancied than real; but it is no part of our purpose to explain or defend the modern system of classification, or to show how, by a few divisional lines, each individual of this vast multitude of varied forms may be assigned to its own family and tribe. This, however, is the use of classification, while it encourages and strengthens the faculty of observation, and directs the mind of the student to those resemblances which are characteristic of family alliance,—those differences which distinguish races.

[To be continued.]

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#### NEW BOOKS.

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LIST OF BRITISH CURCULIONIDÆ, WITH SYNONYMA. By JOHN WALTON, F.L.S., &c. London, 1856. Printed by order of the Trustees of the British Museum.

There is not a Coleopterist in the kingdom but will be pleased to hear that the long-expected List of Rhyncophora has at length appeared: there is not one Coleopterist but will be disappointed with it. The ability of Mr. Walton for the task of revising the nomenclature of this difficult section, fortified as he has been by correspondence with the great German entomologists who have made it their peculiar study, is on all hands admitted, but he has failed

to convey his knowledge to others. The names placed under each recognised species as synonymes, are quoted (with some exceptions) without the prefix of the genus, and the names only of the authors are affixed, without a reference to the place in their works where they are to be found. An Englishman might guess what is meant, but so he might without this list, and for a foreigner the task is hopeless, a result the more to be regretted as the author has attained a European reputation. But there is a still graver fault: the genera are not always applied correctly. Take the following for one instance out of many:

*ANTHRIBUS*, Fabricius,  
A. *ALBINUS*, Lin. Marsh, Gyll.,  
&c.

Now, as the genus *Anthribus* was not published by Fabricius in the 'Systema Eleutheratorum' until 1801, when Linnæus had been dead twenty-three years, this species cannot be called the *Anthribus albinus* of Linnæus. It was included by Linnæus in his genus *Curculio*, a name which has no representative in this list, and is only recalled to our recollection by being used as a foundation for a family appellation.

From our knowledge of the patience and assiduity with which for many years the author laboured at this, his favourite family, we entertain no doubt that this list is correct; it was only required that he should have put upon paper what he had in his head, or rather what he had at his fingers' ends. The requisite corrections can easily be made in the next edition, which we hope will soon appear, for this is often unintelligible.

**INSECT CABINETS.** — On Tuesday next, 11th inst., Mr. J. C. Stevens will Sell at his Great Room, 38, King Street, Covent Garden, the collection of Insects of Charles Lamb, Esq., and FOUR CABINETS.

Enquiries having often been made for Cabinets, we beg to direct attention to this Sale.

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*Second Thousand. Price 2s. 6d.*

## THE ENTOMOLOGIST'S ANNUAL FOR 1856.

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Objects of a Collection of Insects.

Ghent to Glogau, and Stettin to Schaffhausen, in search of Entomologists.

Important New Works on Entomology.

List of Entomological Books now on Sale in London.

John Van Voorst, 1, Paternoster Row.

\* A Supplemental List of British Entomologists will be given in the 'Annual for 1857.'

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Printed and published by EDWARD NEWMAN, Printer, of No. 9, Devonshire Street, Bishopsgate Without, London, in the county of Middlesex.—Saturday, November 8, 1856.

# THE SUBSTITUTE;

Or, Entomological Exchange Facilitator, and  
Entomologist's Fire-side Companion.

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No. 4.] SATURDAY, NOVEMBER 15, 1856. [PRICE 2d.

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## FOREIGN INSECTS.

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As a rule foreign insects *must* be bought; and this fact alone is sufficient to limit the number of their possessors; but when the time, space and expense, requisite for their preservation, are also considered, it is evident that the persons in this money-getting country, who will attend to exotic Entomology, must always be few. But the advantage to Science from the possession of a collection of foreign insects is so great, that we cannot but be desirous that those who have the power should make one—not of all Orders, for that would be a hopeless task—but each person of some one Order, or even a Family. There are hundreds of wealthy men that if they only had a taste for Natural History might find in exotic Entomology an employment for their leisure of much service to themselves and Science. It seems that only individuals and nations can succeed in forming and keeping large collections of insects, for societies to which such a collection

was deemed to be a necessary object have failed in their endeavours to keep it together. The Entomological Society of France, and the Zoological and Entomological Societies in England, are examples of the truth of the adage, "that what is everybody's business is nobody's business." The advantage of a collection of foreign insects is not merely the knowledge that so many of them in such variety of form, structure and colour, exist, but that we have in them, so far as such things can avail, the materials for studying the system that Nature has adopted in the creation of organised beings. We say as far as such things can avail; for he who has before him only the dead dry forms of insects, of whose manners and habits he knows nothing, is in the position of one who views a show of figures without knowing what springs govern their movements, or indeed any more than the names of the actors. Still such knowledge, cut and dry as it is, is not to be despised; from time to time it may be vivified by the discoveries of observers of the

insects in their native countries: indeed a good deal, considering the difficulties attendant, has already been accomplished; and we hope when the collectors, whose enthusiastic ardour has for years sustained them in the cause of Science in the midst of fever, death and desolation, shall give the result of their experience to the world, that Science, as well as the individuals, may be enriched in proportion to the danger incurred in the acquisition. May it not be taken amiss if we remind those who would not see such services left to be their own reward, that they could not better show their appreciation of them than by contributing their share of the expense *now*, or it may happen that for want of support the supply of novelties and rarities may be stopped, and the means of getting them not again occur. It should be a rebuke to our English collectors to know that rare insects from the ends of the earth are sold at less prices than British ones. So much for individuals. Public museums should be in a position to do more in procuring novelties; but, with scarcely an exception, museums are not up to the mark in this any more than in other respects, though whether the fault be that of their conductors or supporters it is not now our purpose to discuss.

#### TO CORRESPONDENTS.

*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON.*

*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

*'THE SUBSTITUTE' will be continued for Twenty weeks, and will be forwarded weekly by post to Subscribers of Five Shillings, which amount may be sent in postage stamps to the publisher.*

A LOVER OF NATURE.—Rymer Jones's 'Outline of the Animal Kingdom,' and Westwood's 'Classification of Insects.'

J. B., WISBECH.—No. 1 of 'The Substitute' was on sale at 6 P.M. on the Thursday prior to its date. No. 2 was on sale on Thursday afternoon, and the sale to the trade was completed at 9.30 on Friday. The paper will always be ready on the Friday, and may be procured of Kent & Co., Paternoster Row, as well as of the publisher.

#### DUPLICATES AND DESIDERATA.

*Duplicate Lepidoptera.*—I have a few specimens for exchange of the following species:—

Liparis Salicis,  
Agrotis Putris,  
Trachea Piniperda,  
Miselia Aprilina,  
Epunda Lichenca,

Aporophila Australis,  
 Philopyra Pyramidea,  
 Odontopera Bidentaria,  
 Himera Pennaria.

I am in want of

Steropes Paniscus,  
 Pamphila Comma,  
 „ Actæon,  
 Apatura Iris,  
 Erebia Cassiope,  
 Trochilium Cuyipiformis,  
 „ Myopæformis,  
 „ Formicæformis,  
 „ Culiciformis,

Procris Globulariæ,

Eulepia Cribrum,

Lithosia Quadra,

„ Griseola,

„ Stramineola,

„ helveola,

Orgyia Coryli,

„ Fascelina, (female)

Cerura Furcula,

„ Bifida,

Notodonta Dictæoides,

Clostera Curtula,

Trichiura Cratægi,

Catocala Promissa.

—E. LETHBRIDGE, 40, *Old Town Street, Plymouth*; November 1, 1856.

*Lepidoptera*.—I am a mere beginner in Entomology, but I have the following to spare, and any person can have them on application.

Papilio Machaon,  
 Melitæa Artemis,  
 Erebia Blandina,  
 Satyrus Semele,  
 Thanaos Tages,  
 Smerinthus Populi,  
 Anthrocera Filipendulæ,  
 Procris Statices,  
 Euthemonia plantaginis,  
 Lasiocampa Quercus,  
 Chersotis plecta,  
 Agrotis aquilina,

Polia Chi,  
 Tæniocampa Gothica,  
 Plusia Gamma,

„ Chrysitis,

and several other things. I would be obliged to any one that could help me with

Liparis auriflua,

„ chrysorrhæa,

Orgyia Pudibunda,

Orgyia Gonostigma.

—W. CAIRNES, *Head of Church Street, Durham*; November 2, 1856.

*Lasiocampa Rubi*.—Will any of your correspondents favour me with a few eggs or larvæ of the Fox Moth, as I wish very much to rear it from its earliest stage.—EDWARD R. PRIEST, 14, *Parliament Street, Westminster*; October 30, 1856.

Allow me to suggest that when applying for any of the duplicates mentioned in 'The Substitute,' a great deal of writing may be saved by enclosing a marked list of desiderata in the same envelope with the application for any insect mentioned, as the writer may have other duplicates that would be also acceptable; and it would be well if the list sent had a mark affixed showing what duplicates he had to forward if any of them should be wanted. In all cases I think it better to write first, never sending a box on the first application, for I have returned some on several occasions containing only a pair of *Rivaria*, which cost sixpence postage, whereas if I had known at the time all their wants I could have sent them many other species; therefore I think in all cases it is the best way to send a marked list at the time of application. Also another

important thing to facilitate exchanging is to return any box received by next post if possible. Now many of my correspondents suffer at the present moment from this cause alone. If persons retain your boxes from three to six weeks, how by all "that's slow" can we get along. Therefore remember to "Return Boxes per Return."—E. S. NORCOMBE, 5, *Salutary Mount, Heavitree, Exeter*; October 28, 1856.

### CAPTURES.

*Phlogophora Empyrea*.—I am pleased to communicate the information to the readers of 'The Substitute' that on the 14th inst. I succeeded in taking in this neighbourhood two pairs of this rare insect.—G. SMITH, 9, *King Street, North Street, Brighton, Sussex*; October 20, 1856.

### COMMUNICATIONS.

*Fertile Eggs from single Female Insects*.—I have been engaged for some time past in investigating the history of *Daphnia Schæfferi*, an animal the female of which produces fertile eggs even when kept separate from the male, and I write to you to solicit from the numerous entomologists, who will I know see this letter if you kindly insert it in 'The Substitute,' the details of any similar facts which may have occurred to them in the course of their observations: not only in the *Aphides* and *Cynipidæ*, but also in the moths, I believe such instances not very unfrequently occur. Jourdan has published several, and I shall feel greatly obliged to any entomologist who will forward to me any

similar observations. Permission to publish would enhance the obligation.—JOHN LUBBOCK, *High Elms, Farnborough, Kent*; November 8, 1856.

[We shall be happy to publish any communications on this very interesting and obscure subject.]

*The Lancashire Collectors*.—Did you ever read such nonsense as Mr. Gregson's in the 'Zoologist?' I have no time for controversy, but surely he invited "a setting down" by some old collector, and it is hardly fair of the editor not to allow him to have it. Can you translate his Latin,—what is "*nigrifoldella*?" Stark, staring nonsense! Compare our dog-Latin with the beautiful classic of Zetterstedt and see how refreshing it is to the scholar after the trash we print in England; or look to the beautiful introduction to Marsham, by the Bishop of Carlisle, and think of the Latin of this time. *PROH PUDOR!*

*Hybernating Larvæ and Pupæ*.—Can any one tell me where the cocoons of those Bombyces which pass the winter in the pupa state are to be found. *Eriogaster Lanestris* must always pass the winter as a pupa. The larvæ of *Lasiocampa Quercus*, *Trifolii* and *Rubi*, are said to hybernate, yet all the larvæ of *L. Quercus* that I have ever had spun up in the autumn, passing the winter as pupæ; probably *Trifolii* and *Rubi* sometimes do the same, and very likely *Gastropacha Illicifolia*, yet I never heard of the pupæ being found. *Saturnia Pavonia-minor* we know attaches its cocoon to heath or other plants. Do others do the same? But even supposing that the larvæ hybernate they must surely be pretty well

grown, or at any rate easy to find. Does any one know where they would be likely to hide? as it would be quite as amusing winter's occupation to search for hibernating larvæ as to dig for pupæ.—CHARLES G. BARRETT, 37, Park Street, Mile End; October 31, 1856.

*Steropes Paniscus*.—In No. 19 of the 'Intelligencer' a correspondent, at Cirencester, notices the capture of *Steropes Paniscus*, and the editor adds, "this is a new locality for the local *Paniscus*." In the subsequent Number the correspondent admits he was in error, the specimens proving to be the common *Pamphila Sylvanus*. I beg to say that during the summer I took two specimens of *Paniscus* the same day, and saw others on the wing.—G. GASCOYNE, Newark; November 1, 1856.

*Late appearance of Plutella porrectella*.—It may not be amiss to tell you that I took, about a fortnight ago, a dozen specimens of *Plutella porrectella* evidently quite fresh and just out. As this is very much later than the time mentioned in the 'Calendar' for the appearance of this insect, it appears to me as if these must have been a third brood.—T. WILDMAN, Grove Place, Camberwell; November 1, 1856.

*Notes on Lepidoptera*.—I was much interested with the remarks in a "Beginner's List of Butterflies," and think we should soon know more about them if everybody adopted the same plan. There can be no question about the hibernation of *Gonepteryx Rhamni*, for I have taken them in the spring with the wings stained,

evidently from hibernating in a damp place. I think there are two broods in the year, one in the summer, and the other in the autumn, which hibernates. Last autumn (1855) the larvæ of *Pieris Brassicæ* abounded in Shropshire to such an extent that the brocoli were almost destroyed, and the savoys and borecole completely reduced to skeletons, and even the turnips were extensively attacked; it seemed as if the air would be filled with white butterflies this spring, but to my surprise they were nearly all Ichneumonised; certainly not one-fifth, perhaps not one-tenth escaped, the walls, railings and even trees, were studded with the little yellow or white bunches of *Ichneumon chrysalides*. I am pretty sure that there are three broods of *L. Ægeria* in the year; I have noticed them looking fresh in April, June and August or September; and as they quickly lose their beauty and fade, it is easy to tell a young specimen from one a few weeks old. The female of the second brood of *L. Megara* appears to be larger and lighter than that of the first or any of the males. I never met with a *V. Atalanta* that had any appearance of having hibernated, and I think it very seldom happens. In Salop I could not find a specimen of this insect in 1854, and in 1855 it did not appear till nearly the end of September, and lasted till the beginning of November. What becomes of *V. Polychloros* in the autumn? They were pretty common the first fortnight in August, but since I have not been able to find one; yet they appear again in the spring. Is it possible that they retire into

winter quarters while the weather is still hot as it is in August? Surely there is more than one brood of *V. Urticæ*. The females which have hybernated must all have laid their eggs by the end of May, and yet the larvæ are not to be found in August, nor even September: they feed up rapidly, and do not remain long in the chrysalis: last year the latest brood, which was in October, had the spots along the costa of the upper wings, which are usually yellow, of a silvery white, so that they looked very conspicuous. I think I never saw *Thymele Alveolus* close its wings over its back; the lower wings were always horizontal, the upper ones a little raised, so as not to touch the lower. I never met with a second brood. Although *P. Sylvanus* abounds in Salop I never met with one earlier than July: I do not believe in a May brood. In some rough fields on the top of Wenlock Edge, a range of hills in Salop, I found in June *Anthrocera Filipendulæ* in immense numbers, but searched in vain for *Lonicæræ*. There were plenty of pupæ in cocoons on the grass-stems, and I took about a score home: to my surprise in a few days they produced *Lonicæræ*; and when I went to the place, a fortnight after my former visit, *Lonicæræ* was in equal profusion, and scarcely a *Filipendulæ* to be seen: they were so abundant that there were generally at least half a dozen on a tuft of wild thyme, which grows there in abundance. The pupa of *S. Salicis* is black, with small flesh-coloured spots on the segments, and a good deal of yellow hair. I have frequently seen

*Gnophria Rubricollis* flying in the sunshine. — CHARLES G. BARRETT, 37, Park Street, Mile End; November 3, 1856.

*Notes by an Old Collector.* — Barren Wood, rich ground for an entomologist, is about eleven miles south of Carlisle, on the left bank of the river Eden. There the entomologist may luxuriate for infinity. It is likewise worthy the notice of the tourist in search of the picturesque. The forest is redolent of beauty. There are scenes viewed from the river of surpassing loveliness, and the picture, as seen from the Cat Clint (a rocky eminence rising abruptly from the river), is magnificent. As you stand on this lofty pedestal, the noble river below you gurgles over its rocky bed its drowsy music, breaking the stillness otherwise reigning around; and Coombe Wood, in wild grandeur of rock and tree, rises on the right bank of the river rugged and frowning. On your side, margining the rock on which you stand, and extending its front opposite the wood, is a meadow, for loveliness worthy the pencil of a Constable, a solitary oak heightening the effect. Bordering the meadow and expanding over a great surface, is an amphitheatre embracing nearly every variety of plant incidental to the North, the majestic oak towering over all the traceried fern and dark and bright hued shrubs gracing the rocky sides and lower region, and forming a scene that becomes graven on the memory for ever. Along the sloping sides in sportive playfulness flies *Nemeobius Lucina* in no niggardly numbers. Here are also the active *Thymele*, the more



sluggish but pretty *Selene* and *Euphrosyne*, the strong-winged *Aglaia* and *Thecla Rubi* and *Quercus*, the latter sometimes difficult to capture on account of its flying high amongst the oaks. In the same category, among the birch, may be placed *Brephe Notha*: that beautiful moth *Hipparchus Papilionarius* is to be obtained from the alder: from the alder, too, the caterpillar of that scarce moth *Geometra Sublunaria* is to be sought: I reared three from larvæ obtained from the alder growing on Rockliff Moss. At Tarn Wadling, near to Barren Wood, I captured *Russula* flying in the middle of the day. *Jacobæa*, which although also a day flyer, is classed among the *Noctuina*, as are also the *Lithosia*; yet I have seen a *Lithosia* (either *Complana* or *Complanula*) fly on an afternoon about the tops of oak in Wetherall Wood, as strong on the wing as a *Thecla Quercus*. In one of my excursions to Barren Wood having obtained more caterpillars than my larva boxes would hold, I had recourse to my moth boxes, and put two caterpillars, of what I considered *Cerapacha ridens*, into it. On taking the lid off to give them air they endeavoured to escape, and when one had his head on the edge of the box the other clambered over him and bit him on the back of his head; a greenish liquid oozed from the puncture, and the wounded larva dropped to the bottom of the box: watching his death I forgot his aggressive brother, and he escaped. At other times when I have had many caterpillars in one box, on opening it I have found the mutilated

remains of some, proving that certain caterpillars are carnivorous. Hybernating larvæ I have experienced difficulty in rearing; and after many ineffectual attempts to rear the *Lasiocampa Rubi* in my beather and oak feeding-cages I have tried another system. Having captured a dozen caterpillars on Houghton Moss, I brought some peat dust from the same place, and half filling a small wooden box with it I put the larvæ in (having first perforated the lid for air-holes), and placed the box in a cupboard abutting on the kitchen flue, and between Christmas and the end of January nine moths came out, six perfect insects and three cripples: the larvæ were full-sized when I took them about the beginning of October. With the larva of *Cossus Ligniperda* I have been eminently successful. I had a tin box made (the lid also well perforated with holes) and half filled it with sawdust; three full-fed *Cossus* larvæ were put in, and the box was placed on a shelf in the kitchen where a fire is kept, and in due course of time three fine moths emerged from the sawdust in perfect condition. I have never had a failure with a full-fed *Cossus*. Those that are found crossing a road are generally full fed. With regard to the colour of the larvæ of *Apatela Leporina*, all that I have seen in their early stages were white; those of a yellow colour were in their last stage and ready to change; and so convinced did I become of this, that when I captured a yellow-haired *Leporina* I placed it in my pupa box without food, and seldom failed in rearing it. Sometimes

I have captured larvæ nearly denuded of hair; what little was left was a greenish yellow, but those in that condition were generally too exhausted for further effort.—  
 RICHARD CARTMEL, 13, *Williams Grove, High Park, Walworth*; November 3, 1856.

*An Entomological Ramble in the Isle of Wight.*—The morning of the 31st of July was as beautiful a day as an entomologist would wish to behold. We looked in vain to perceive the slightest trace of a cloud in the whole expanse of sky, and the sea had that intense azure appearance, which is so rarely seen on our English shores, but which forcibly reminds one of the seas of Italy and the south. We issue from our cottage, at Shanklin, at a little past 8 a.m., armed *cap-à-pied* with net, collecting-box, &c. Even the heat is very great, and would be almost insupportable were it not for a slight breeze from the west, which comes at intervals in gentle puffs of air almost imperceptible. We proceed on our way, after leaving the main road, up a deep (and steep) sandy lane, bordered on each side by a bank and tall hedge. We feel quite delighted to be at freedom among Nature's works; but at the same time our happy frame of mind is somewhat lessened by the hosts of *Diptera* who (finding a new subject to bother and suck at) play around and settle on our person. We especially notice a lengthy fellow of a fly in dusty brown apparel, with a shining eye, and a formidable-looking sucker, who appears to have a liking for the cloth of our coat, as he walks about thereon digging in the aforesaid proboscis.

We think this rather a novel propensity, and therefore do not molest him. But alas! we soon find that this apparent partiality for cloth is but a cloak for more carnivorous tastes, for we suddenly feel a sharp tingling pain on our neck, and on putting our hand to the place the very same fly darts away and settles on our coat again. Our interest in him is now changed to hatred, and we make a tremendous blow at him, but he seems to be used to that sort of thing and slips away, and we ourselves receive the blow without the satisfaction of destroying the wretch. However, we think we have driven him off at any rate, and walk on. Presently our glance happens to fall on the sleeve of our coat,—there sits the fly quite unconcerned, and slowly advancing towards our hand. We stand still to watch him. He walks on rather quicker, reaches the boundary of our sleeve, places one leg on our hand and scrapes about with it to make sure that it is flesh he's coming to, and then walks entirely on our hand: he reaches the centre and commences sucking. We behold him with malignant joy, and let him settle himself completely, in order to make sure of nabbing him. We feel the tingling again, and suddenly close our hand. We open it cautiously—he's not there! We give up in despair, and yield ourselves to our fate. We feel we have been wasting our time with the rascal, and set to work after more pleasing insects. The first thing that strikes us is the swarm of *Hipparchia Janira* and *Tithonus* that hover round every bramble-flower in crowds. We give a

sweep with our net and entrap quantities, of which, however, we only keep three or four, viz., two or three of *Tithonus*, and a male of *Janira* with the under wings nearly white. Suddenly a yellow insect dashes rapidly past us, and as suddenly stopping a few yards off, settles on a bramble leaf. The stout, robust make, and large head, proclaim it to be a "Skipper," *Pamphila Linea*. Now two or three more of the same species, and also *P. Sylvanus*, flit by, and are accordingly caught and pinned. We walk on, and presently cut a beating-stick from the hedge, and commence beating. Out flies a *Geometra*. We bag him, and he proves to be *Ypsipetes elutaria*, which we find after to be abundant in every hedge. While pinning the latter species a dark shadow passes over us rapidly. We turn quickly, and see *Lasiocampa Quercus* tearing off down the lane as if his life depended on his being at the end within a minute. We do not trouble ourselves to go after him, feeling sure that we shall see another shortly, but fix our *elutaria* and proceed. Here comes something! It can't be *L. Quercus*, being much too small and too dark. We fear he's too high for us to reach. Now he's here! A jump and a twist of the net!

We've got him! A Hairstreak. Can it be *Thecla Betula*? Ah! now the wings open! A purple flash! Only *Quercus* (not *Lasiocampa*) after all. There must be a wood, however, at the top of the lane, which is certainly some consolation. This makes us proceed rather faster, keeping a good look out on either side for anything that may turn up. Out flies a moth, who is soon caught. We pin him into our box and examine him. *Zerene procellaria*? What a pretty creature! Now another! *Hemithea Cythisaria* this time. A few yards more and we reach the end of the lane, when, opening a gate, we find ourselves in a clover-field: what a delicious scent is exhaled from the myriad flowers as the soft breeze sweeps over them. We cannot refrain from lying down in the clover and enjoying a good roll in it (albeit to the great detriment thereof), our excuse being that we have only escaped from London the previous day; and the bare feeling of being free in the sunny fields puts us into ecstasies, and makes us perform vagaries that would cause an habitual liver in the country to stare with wonder.—ROLAND TRIMMEN, 71, Guildford Street, Russell Square.

[To be continued.]

### *The Song of Bugfliwatha.*

[As we know enough of the persons mentioned in the following *jeu d'esprit* to believe they will not feel hurt or offended by its publication, and as we wish to please everybody, we will gratify the anonymous author by printing his contribution of the "wishiwashi."]

Should you ask me whence this story  
With its music, with its magic,  
With its wonderful perfection,  
With its beauty with its wisdom,

## THE SUBSTITUTE.

With its deep and wholesome teaching,  
 With its learning, with its science,  
 With its wild conglomeration,  
 I should answer, I should tell you,  
 "Jolly Douglas told me of it;  
 "He who writ the 'World of Insects,'  
 "He who lives at pious Kingswood—  
 "Kingswood by the Blackheath Station—  
 "Station of the North Kent railway;  
 "Douglas with the lots of children,  
 "Douglas with the wondrous children—  
 "Wondrous Alice, silk-haired Laura,  
 "Laughing Polly, fattest Harry,  
 "And a new and perfect baby:  
 "Jolly Douglas told me of it."

Kingswood, I have called it pious;  
 If you ask me wherefore pious,  
 I should answer, I should tell you,  
 Pious because Spurgeon preached there;  
 Spurgeon mountebank religious;  
 And the ladies kissed the pathway,  
 Kissed the pathway he had trodden,  
 Made an idol of the preacher:  
 Thus he made our Kingswood pious.

Hear the song of Colymbetes,  
 Water-bugfly—Bugfliwatha—  
 Pretty Colymbetes fuscus.  
 Hear the song of Colymbetes,  
 Hear the song as Douglas told it;  
 Douglas with the lots of children;  
 He who writ the 'World of Insects.'

One bright morn the silk-haired Laura  
 Wandered happy in the sunshine,  
 And she saw a water-bugfly  
 Buzzing gaily in the sunshine,  
 Buzzing in the happy sunshine,  
 Just a speck in the horizon,  
 Very far off in the distance,  
 But she knew it was a bugfly,  
 Water-bugfly, Colymbetes,  
 Water-bugfly, Bugfliwatha.  
 On its way it met a watchman  
 With its stomach rainbow-tinted,  
 It is called the great dor-beetle,  
 But in science Geotrupes.  
 Then the pretty Colymbetes,  
 Water-bugfly Bugfliwatha,  
 Fearful of the great dor-beetle

Plunged into a pool of water.  
 And the silk-haired Laura caught it,  
 And she took it to her father,  
 Took it to the Jolly Douglas,  
 And she writ a note about it.  
 "Here's a note about a bugfly,  
 "Put it in the Wishiwashi,  
 "Put it in the Nambipambi :"  
 Thus she now addressed her father.  
 In 'The Substitute' he put it.

## EXTRACTS.

NOTES ON NOCTUÆ: FROM  
GUENEE'S NOCTUELITES.

[Continued from p. 34.]

*Apamidæ.*

The *Apamidæ* have characters in common with *Agrotis* and *Hadena*, and have been arranged by authors alternately near the one or the other. Their larvæ have a strong resemblance to those of the former group, and live like them if not actually buried, at least carefully concealed, and in such sheltered places that the light only penetrates in the slightest possible degree. Some are even stem-borers. The perfect insects bear traces of this secluded life; and a true entomologist would never confound them with the *Hadenidæ*, in spite of the resemblance of some of the *Apamidæ* with the *Hadenæ* of the section which includes *Thalassina* and *W.-latinum*.

The *Apamidæ* are numerous in genera and species; and the species are generally very variable. As the creation of the family is quite a new one, it may afterwards be found susceptible of modification, and perhaps also of being divided. To indicate these divisions, I separate them into four

sub-families: the first corresponds to the family *Gortynidæ* of Duponchel: in it we find many larvæ completely stem-boring, but the greater part live simply concealed amongst roots; the second sub-family, which might be called *Xylophasidæ*, contains all the species which authors classed near *Xylina*, on account of the elongate form of their wings and their longitudinal markings, but they have no other connection with them. Their larvæ much resemble those of *Agrotis*, live nearly in the same way, and are sometimes completely vermiform. In the third subfamily, which may be called *Episemidæ*, I place those *Orthosiform* species which have been alternately placed with *Agrotis*, *Orthosia*, and *Hadena*. The antennæ of the male are very strongly ciliated, and the abdomen sometimes crested. The fourth subfamily contains the true *Apamidæ*. Their larvæ, less vermiform than those of the second section, are still of dull colours and with a shining skin, and, though not living in the earth or among roots, conceal themselves with care. The perfect insects have a family resemblance, and may be recognised, independently of the ensemble of their characters, by the terminal portion of their anterior wings,

which is always much darker than the ground colour. (Vol. I., pp. 119, 120).

### *Gortyna.*

Of all the *Apamidae*, this is the most curious in its manners, and which in that respect most resembles *Nonagria*. Like them, the larvæ are of pale colour, or with the spots and plates of the neck and anal segment horny and shining. They feed also on the pith of the plants, in the interior of which they pass their lives, and they contrive in the same way an egress for the perfect insect. The perfect insects, like the *Nonagriæ*, indicate their secluded life by the length of the abdomen and its tendency to turn greasy, but instead of being dull-coloured and with insignificant markings, they are on the contrary the prettiest insects in this family. The fore wings are generally of a warm tone, with the lines well marked. (Vol. I., p. 120).

### *Axylia.*

The genus *Axylia*, represented in Europe by a single species, has hitherto been placed sometimes with *Xylina*, sometimes with *Agrotis*. From *Xylophasia*, to which it is most nearly allied, it differs especially by the abdomen not being crested. The larva of *putris* (the only species of which the transformations are known) also differs widely from the larvæ of *Xylophasia* in the form and disposition of the markings, since it has some resemblance with the larva of *Mamestra Persicariæ*. The perfect insects are all readily recognised by their oblong folded wings, which give the insect an

elongate form. There is a great resemblance in their markings; they are partly disposed lengthwise, as in *Xylophasia*; one especially notices two dark terminal streaks which run towards the reniform stigma, always the most distinct. The anterior portion of the collar forms a pale half-moon, spotted with brown, as in *Pygæra bucephala*. The hind wings are well developed, and the abdomen is conical, and so little covered with hairs, that it appears perfectly smooth and shining. Hence *Axylia* cannot be confounded with any other genus of this family. The species are all of small size: ours is the largest I know; the others all come from Africa. (Vol. I p. 133).

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Printed and published by EDWARD NEWMAN, Printer, of No. 9, Devonshire Street, Bishopsgate Without, London, in the county of Middlesex.—Saturday, November 15, 1856.

# THE SUBSTITUTE;

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No. 5.]

SATURDAY, NOVEMBER 22, 1856.

[PRICE 2d.

## THEORY.

THERE are many grades of theory. In Natural History we have them from the notion that the tail of the caterpillar becomes the head of the butterfly, up to the 'Vestiges of Creation.' The proper term for such things is speculation; for we take it that a theory proper should be a deduction from facts, capable of explaining and being rigidly tested by all the circumstances pertaining to the subject to which it refers. To place a number of related facts together and call the assemblage a system is not enough; the spirit of genius must breathe upon the dry bones, give them cohesion, and erect them into a living body. It is only genius can do this, but genius itself fails if it be not master of sufficient data; it is then like one attempting to build a ship when he has only materials enough to make a raft. And if it be necessary for him who would propound a theory to have a great amount of knowledge as well as a large endowment of genius, only in a

less degree are these qualifications required in those who criticise the work; and when a theory is given to the world it behoves all to consider whether they are capable of understanding it, and pause ere they ridicule what they cannot comprehend. The greatest truths have come to light as theories; and, though clear and certain enough to the earnest minds of their discoverers, have had, almost invariably, to fight their way through ridicule and persecution until they were established as truths to the apprehension of men in general; the heresy of one age becoming the orthodoxy of the next. A theory which will stand the scrutiny of comparison with known facts has a great probability of being true, but the most severe test that can be applied is the discovery of a new fact: if it harmonise with the theory there is so much more reason to believe the latter to be true, but if it do not there is reason to believe that the theory is not sound.

To discover the System of Nature is the great aim of the philosopher: every student soon learns

that even in its minutest details the whole material creation is organised upon a plan, and it should be for the encouragement of the humblest to know that, although he may never rise to be a proponent of theories, his observations may afford to the systematic naturalist the very key-stone to the temple of the System of Nature. At the proper time the man to point out clearly the one idea of that system, or rather the idea of which that system is the exponent, will come, if indeed he be not already here, with the theory that, after the usual scuffle, will carry conviction to the minds of all enquirers.

In the 'Entomologische Zeitung' we read that the Entomological Society of Stettin have issued the *sixth* edition of the 'Catalogus Coleopterorum Europæ,' at the price of sixpence. The fifth edition was published in 1855, at the same price: it contains 98 pages printed in triple columns, besides an Index of Genera and Families, and is a marvel of cheapness. It is any thing but creditable to our British Coleopterists that such a Catalogue of the Coleoptera of Europe can be produced, and that a modern list of our British beetles cannot be procured at any price. We have so long heard that such a work is in preparation, without any signs of its coming, that we cease to believe the rumour. It is true that certain families have been

worked out by different hands, but we want a complete and cheap list like the Catalogue before us, for, with a few learned exceptions, the bulk of collectors are quite at a loss what to call their beetles, or how to arrange them, and many are hindered from becoming collectors at all.

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#### TO CORRESPONDENTS.

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*All communications to be authenticated by the name of the writer, and to be addressed To THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON.*

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*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

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#### CAPTURES.

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*Autumnal Sugarings, &c., Plymouth.—Petasia cassinea, taken at street lamps, but not common; Crymodes Templi, taken at street lamps, four specimens; Noctua Dahlii, on the wing at dusk,*



three specimens; *N. C-nigrum*, at sugar, common; *Agrotis Saucia*, at sugar, a good catch, several varieties; *A. Suffusa*, at sugar, common; *A. Segetum*, at sugar, common; *A. Corticea*, on walls (day time), not common; *A. Tritici*, bred, not common; *A. Puta*, at sugar, good supply; *A. Putris*, at sugar, rare; *Orthosia neglecta*, at sugar, very common; *Xanthia ferruginea*, at sugar, very common; *X. rufina*, at sugar, very common; *X. cerago*, at sugar, rare; *Glæa Spadicea*, at sugar, very common; *G. Vaccinii*, at sugar, very common; *Scopelosoma satellitia*, at sugar, not common; *Miselia oxyacantha*, at sugar, common; *Chariptera Aprilina*, at sugar, common; *Polia Chi*, at sugar, three specimens; *P. flavicincta*, at street lamps and on walls, common; *Epunda lichenea*, at street lamps (out of a dozen specimens of this species not one is fit for the cabinet; they are so deluded by the light, and are so impatient to get into the flame, that I have not succeeded in taking a perfect specimen from the lamps; they are, however, to be found at rest in the daytime on walls, and most of the collectors here breed a few every year). *Hadena Æthiops*, at sugar, good supply; *H. Protea*, at sugar, common; *Xylina rhizolitha*, at sugar, pretty common; *X. petrificata*, at sugar, not common; *Calocampa vetusta*, at sugar, common; *C. exoleta*, at sugar, common; *Phlopyra pyramidea*, at sugar by hundreds, for two months; *P. Tragopogonis*, at sugar, scarce; *Stilbia anomalata*, on the wing at dusk, rare; *Stenopteryx hybridalis*, among grass, common; *Hypeno-*

*des albistrigalis*, on the wing, rare; *Phesyle psittacaria*, at sugar, common; *Cheimatobia dilutaria*, at sugar, common; *Depressaria pimpinellæ*, *D. pastinacella*, *D. applana*, *D. heracleana* (these four species were all beaten from thatch, *heracleana* being by this method the rarest, *applana* the commonest); *D. Alstræmeriana*, at sugar, common. The above list of species will appear to some persons to be rather peculiar, viz., *Geometræ* are not generally considered to come to sugar, and in some instances the rare species common, and the common rare.—J. J. READING, 42, Gibbons Street, Plymouth; November 4, 1856.

*Captures in the North.*—Knowing that many young entomologists think the collecting season is over as soon as the sun ceases to scorch the coat on our backs, I send this note to remind them that there is still work to do. October 22, at Dumfries, took *Petasia cassinea*, *Diloba cæruleocephala*, and *Ennomos Tiliaria*, at gas-lamps in the streets. October 26, at Carlisle, thought insects scarce, but found out why; the fact was there were several collectors before me stripping the lamps as they went along. I met with Mr. Hunter and friend; they had taken *Petasia cassinea*, *Pæilocampa Populi*, and *Diloba cæruleocephala*. November 2, at Stourton Quarry, Cheshire, took *Pero-neæ mixtana* by smoking overhanging banks where *Erica tetralix* grows. It is necessary to have a friend to assist when smoking for insects. On the 2nd Mr. Cooke stood, net in hand, whilst I smoked the bushes, and

we secured about twenty beautiful specimens.—C. S. GREGSON, Stanley; November 3, 1856.

*Pupa-digging*.—During the last few days' pupa-digging I have taken the following:

*Egeria* Apiformis,  
*Smerinthus* Tiliæ,  
 " Populi,  
*Cerura* Vinula,  
*Notodonta* Dictæa,  
*Acronycta* Megacephala,  
*Tæniocampa* instabilis,  
 " stabilis,  
*Hibernia* progemmaria,  
*Biston* hirtaria,  
 " Betularia.

— WILLIAM FARREN, JUNR.,  
 King's Old Gateway, Cambridge;  
 November 5, 1856.

#### COMMUNICATIONS.

*Phlogophora empyrea*.—Would you please to record in your next 'Substitute' my capture at sugar, near Lewes, of four *Phlogophora empyrea*, and my friends, who were with me, of thirteen others, beside the twenty-one which your Brighton correspondent mentioned as having been taken at the same place, making thirty-eight in all. Two of your correspondents from Brighton make some allusion to there being some foreign *empyrea* in Brighton. I have taken great pains to inquire of every entomologist in Brighton (with the exception of your two correspondents) if they have any knowledge in any way of any foreign *empyrea* being in Brighton, and they all emphatically deny and repudiate the idea of there being any here, and I think

it but justice that you should publish this statement (which is the truthful one) to correct the error which I am afraid your correspondents have *intentionally*, through a little jealousy in our having taken the insect, imposed upon you. If your correspondents have any clue to there being foreign *empyrea* in Brighton they ought, for their own credit and to clear themselves from suspicion, to make it known immediately.—GEORGE SMITH, 9, King Street, Brighton; November 5, 1856.

*Leiocampa Dictæa* and *Dictæoides*.—Perhaps you could find room for the following in your next Number, as it is a matter of life and death. *Ventilation* v. *Suffocation*.—Having been informed by two eminent collectors of Lepidoptera, one in England and one in Scotland, who have had much experience in rearing moths, that they have never succeeded in bringing *Dictæoides* to perfection, and having noticed the bad success recorded by Mr. Cartmel and others, in attempting to rear *Notodonta Dictæa* and *N. Dictæoides*, perhaps the following hints may be useful. To succeed in rearing these species in confinement the greatest care is required with the pupæ. They should not be left in the earth. Prepare a large box, say 20 inches long by 15 wide and 12 deep, fill it half full with earth and make it very damp, cover the earth with a layer of dry moss, upon which place the pupæ; then put another layer of dry moss upon them. Keep the box in a cool airy place till May, at which time it may be removed into a warmer spot to feel the heat of the sun. This

treatment I find best for all under-ground pupæ. — THOMAS CHAPMAN, *Glasgow*; November 3, 1856.

“*Descriptions of some species of Lepidopterous Insects belonging to the genus Oiketicus.*” By J. O. WESTWOOD, F.L.S.—The above is the title of a paper by Mr. Westwood, published in the ‘Proceedings of the Zoological Society of London for 1854.’ The genus *Oiketicus*, though it will sound strange to some of our readers, is here made to comprise the *Penthophora nigricans* of Curtis, and the *Psyche nigricans* of the ‘Manual,’ but the other species spoken of by Mr. Westwood are exotic. As the paper will probably be seen by few of our readers, and as it is unusually well written, the following extracts may be acceptable.

“It may probably be regarded as one of the settled axioms in Natural History, that there is not a single character which has been employed to distinguish any group of considerable extent which is not liable to be effaced, or even contradicted, by some one or more of the members thereof. Thus, whilst we have quadrupeds without legs, and birds without wings, the great division of annulose animals, characterised by the possession of articulated feet, contains great numbers of species which are entirely destitute of these organs; and in like manner the secondary division of the Annulosa, distinguished by the possession of wings in the final state (or the *Ptilota* of Aristotle), exhibits to us many species which never gain instruments of flight. Instances, however, in which both these grand characteristics are

absent, are of the greatest rarity. Of wingless *Ptilota* examples occur in most of the orders; as in the female glow-worm among the *Coleoptera*; the neuter ant and female *Mutilla* among the *Hymenoptera*; many of the smaller grasshoppers and locusts among the *Orthoptera*; some of the *Gerrida* among the *Hemiptera*; the genera *Boreus* and *Termes* in the *Neuroptera*; the female *Coccus* among the *Homoptera*; the genera *Cheonea* and *Borborus* among the *Diptera*; the *Stylopidae*, in the order *Strepsiptera*, and the females of various moths, as in the genera *Orygia* and *Cheimatobia*, as well as in *Oiketicus* of L. Guinding. Amongst these exceptions it will be remarked that the majority are cases in which only the females are wingless, whilst all except *Coccus*, *Stylops*, and *Oiketicus*, possess articulated feet in the wingless state. These three genera would therefore be regarded, if we considered only the adult state of the females, as the most degraded instances of apiropodous *Ptilota*. But such an opinion cannot be maintained, since the early states of these insects exhibit as high an amount of organisation as those of any of the other insects in the orders to which they respectively belong, their peculiar characteristic being, that, whilst in the great mass of winged insects there is always a gradual evolution of structure by which at length legs and wings are developed, these particular individuals, destined ultimately to appear in such a degraded condition, not only gradually lose their powers of evolution but are subjected to a power of absorption by

which the limbs which they at first possessed are gradually reduced in size, and ultimately entirely lost, till the animal retains only the appearance of a short sluggish vermiform animal, in which not only are the wings and legs, but also the antennæ and the organs of the mouth, almost entirely obliterated, and even the articulated condition of the body nearly lost. Such is the apparently helpless condition of the females of a rather extensive group of moths, which have been long well known to German entomologists under the name of Sackträger, of which the smaller species constitute the genus *Psyche*, whilst some of the larger were formed by the late Rev. Lansdowne Guilding into the genus *Oiketicus*. The memoir on the two West Indian species observed by that author is contained in the fifteenth volume of the 'Linnean Transactions,' and is one of the most valuable contributions to the Science contained in the volumes published by that Society. Whilst the plates, however, which illustrate this memoir clearly prove the close affinity of the two insects, the males are very distinct in form from each other, and ought evidently to be regarded as types of separate subgenera. Of their intimate connection with the smaller European species, known under the generic name of *Psyche*, (but which have lately been distributed by M. Bruand, in an excellent monograph on the group, into various subgenera,) there can be no possible doubt: indeed, the largest British species cannot be separated generally from *Oiketicus*. Of *Oiketicus nigricans* males only were at first captured in this

country, which were illustrated by Mr. Curtis in his 'British Entomology,' under the name of *Penthophora nigricans*. Its generical relation with *Penthophora* is, however, entirely unfounded, whilst even its family connexion therewith is at least questionable."

Mr. Westwood then, after noticing the habits of the larva and male imago, proceeds to describe the female perfect insect as follows:

"The body has all the soft appearance of that of the larva of a wasp or bee, and is of a pale dirty whitish colour, except the upper side of the head and thoracic segments, which are brown; the first, fourth, fifth, sixth, seventh, eighth, ninth, tenth and eleventh segments of the body are furnished at the sides with a pair of spiracles, from which the tracheæ may be seen to radiate through the thin skin of the body. On the under side of the body is a row of nine small brown spots in the middle of the segments, commencing on the segment next to the head, those on the thoracic segments being close together between the minute rudiments of legs. The head has three deep circular impressions in front forming a triangle; the eyes appear to be merely irregular black spots, with the surface continuous and destitute of facets; the antennæ are rudimental, consisting of a minute exarticulated pair of appendages on the under side of the front of the head. Between the rudimental antennæ there is a transverse impression in the place of the mouth, which is alternately puffed out and withdrawn, but no opening is visible. The legs are

minute tubercles; the body is terminated by a small fleshy lobe or appendage, beneath which is a fleshy proleg or wart. The insect has a very strong vermicular motion, contracting segment after segment, considerably resembling in this respect the incipient pupa of some *Hymenoptera*. It twists the extremity of its body about in various directions, especially upwards, with considerable energy."

Mr. Westwood then proceeds to describe the exotic species, and *mirabile dictu*, upsets two already published names on rather singular grounds. Thus the *Oiketiscus elongatus*, Saunders, Trans. Ent. Soc. 43, becomes the *O. Saundersii*, Westwood.

"Considering it advisable to maintain for these curious insects the systems of specific names commenced by the Rev. L. Guilding, I have altered that proposed for the present species by its first describer, it being, moreover, inappropriate as applicable to other species agreeing with the present in structure."

Surely there is but one step from the sublime to the ridiculous. The opening paragraph of the paper represents the sublime, the sudden jump to an uniform termination in *ii* (our readers will easily think of a familiar expression that rhymes therewith), and the raillery of making the present Mr. Saunders a synonyme for *elongatus*, as though he were himself a type of "lengthened sweetness long drawn out," represents the ridiculous. But further, if there was any merit in Mr. Westwood's idea, we mean his *iidea*, why was not *Nigricans* treated in a similar mode; or has

Mr. Westwood less desire to exalt Mr. Curtis than Mr. Saunders. Mr. Curtis was an entomologist of great repute before Mr. Saunders was heard of. We fear Mr. Westwood has committed a grave blunder.—I. I.

*Remarks on Duplicates, &c.*—Allow me to remark upon a statement in the first leading article of 'The Substitute,' commencing at the 14th line, 2nd column, p. 1, which reads thus:—"yet the proper spirit is not to expect any return at all." Now this appears to me perfectly absurd. I have all I require of a species for my own cabinet, and why should I go many miles for more unless in the expectation of getting others, that I have not, in exchange for them, whether it be an *Apatura Iris* for a *Pieris Brassicae*, or a *Plusia Gamma* for a *Dusycampa rubiginea* (for I consider all *Lepidoptera* equally valuable when duplicates, whether it be a *Chrysophanus dispar* or a *Vanessa Urticae*, and should be equally willing to give the former for the latter as the latter for the former, if I wanted either.) Am I to get boxes, then work hard to get insects to put into them, pay postage, and expect nothing but a "beggary array of empty boxes." I say, sir, the proper spirit is to send as many, and as little injured, specimens as you can (even if you retain the worst examples of the species you take in your own neighbourhood for yourself) to your correspondent, expecting he will do the same; for I believe in every place there are what we call local species, consequently one can most likely replace them next season. I have been advised by Mr. Stainton to

get some posting-boxes made for sale upon my plan, which he highly approves, as ensuring the perfect security of the insects sent; therefore any one requiring them will please forward in postage-stamps the amount for such as they need. The following are the sizes (inside measurement) and prices, including postage, to the purchasers. Length  $3\frac{1}{2}$  in., breadth  $1\frac{1}{8}$  in., depth  $1\frac{1}{8}$  in., and only 2d. postage, 1s.; length  $4\frac{1}{4}$  in., breadth  $2\frac{1}{4}$  in., depth  $1\frac{1}{8}$  in., postage 4d., 1s. 6d.; both sizes will contain insects at the top and bottom.—E. S. NORCOMBE, 5, *Salutary Mount, Heavitree, Exeter*; November 4, 1856.

*A New Nepticula Larva.*—I fear I have been unjust; or Lancashire has turned over a new leaf (in this case a leaf of *Vaccinium Myrtillus*). Mr. Edleston has discovered a larva (not that of *Weaveri*) mining a tortuous gallery in leaves of *Vaccinium Myrtillus*. I had received a few weeks previously the same larva from Herr Schmid, of Frankfort, but the 'Intelligencer' being then defunct, and the season so near its close, I thought it was hardly of any use announcing the fact, as few would be disposed to turn out on the moors to seek for a species unknown as British. But I miscalculated the amount of energy latent in a Lancashire entomologist. Mr. Edleston, it is true, had recently visited Mr. Wilkinson, of Scarborough, whose name, this year, heads the list of Micro-Lepidopterological discoverers, and the impulse given on the Yorkshire coast was beneficially expended in ransacking the moors and dells of Lancashire. Mr.

Edleston writes, "The *Nepticula* are widely distributed, and only want looking for."—H. T. STAIN-TON; November 6, 1856.

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## EXTRACTS.

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### NOTES ON NOCTUÆ: FROM GUENEE'S NOCTUELITES.

[Continued from p. 48.]

#### *Xylophasia.*

Thanks to the elongate form of these insects, and their longitudinal markings, they have long been confounded with the *Xylinidæ*, and Mr. Stephens himself, though he rightly constituted for them a distinct genus, left them in the vicinity of the latter family. I have said in my essay how far from natural this arrangement appeared to be, and in my Index I assigned them the place which experience makes me retain for them now.

The larvæ of *Xylophasia* are of dull colours, shining, slightly vermiform, with the spots warty and shining: they always live concealed, and within reach of the roots or lowermost leaves of the plants on which they feed. These plants are especially *Gramineæ* or *Cyperaceæ*. We generally find them in spring, sometimes even in the middle of winter, and the perfect insects appear from June to August.

The genus *Xylophasia* is numerous in species, both European and Exotic: the former have for the most part been ill-studied by authors, and especially by French authors. These have pretended that *Lithoxylea* has been obtained

from the same larva as *Polyodon*, and this error has been dropped in order to commit a fresh one, by referring *Sublustris* as a variety of *Lithoxylea*. There might possibly be also two species mixed under *Rurea*. All these errors are rectified by degrees; but a good monograph of this genus, only advancing well-ascertained facts and accompanied by good drawings, especially of the larvæ, would be far from a useless work to entomologists. (Vol. I., p. 136.)

#### *Dipterygia.*

I now perceive that I was wrong in placing the European species, which composes this genus, in the genus *Cloantha*, of the family of the *Xylinidæ*, together with its ally *Conspicillaris*; but a more profound study of the characters, in convincing me of my error, has also shown me the impossibility of leaving *Pinastri* in the same genus with *Conspicillaris*. Neither can I place it in the genus *Xylophasia*, to which it is very closely allied. I have, therefore, adopted the genus of Mr. Stephens with the name borrowed from that given to the species by Hüfnagel, in allusion to the markings at the anal angle, which a little resembles a bird's wing. I do not, however, conceal that this genus does not yet appear to me to repose on well-defined characters.

According to the larvæ this genus appears to approach rather to *Axylia* than to *Xylophasia*; in fact, as in the former genus, the larva has the twelfth segment rather raised into a pyramidal hump. The spots are neither warty nor shining; and the larvæ

have not the vermiform aspect of the *Xylophasiæ*. They live concealed under the lower leaves, but not in the roots, nor do they construct oval cavities like these latter. (Vol. I., p. 146.)

#### *Xylomyges.*

This genus has always hitherto been classed among the *Xylinidæ*, and has only recently been brought here. It seems, however, much better placed here, and the Exotic species confirm this opinion. The larvæ of *Xylomyges* have not the earthy and vermiform appearance of those of *Xylophasia*, and have more resemblance to the larvæ of *Noctuidæ*. Those of the Exotic species especially resemble the larvæ of a *Triphæna* or a *Noctua*, but we do not find in them the wedge-shaped spots on the twelfth segment, which characterise so well these two latter genera. They always live, like those of the rest of the family, at the foot of low plants, but not buried amongst the roots. (Vol. I., p. 147.)

#### *Laphygma.*

This genus has hitherto been classed, in the system of European species, amongst the *Caradrinæ*, but it is evident that it cannot remain there, in spite of the superficial resemblance between *Laphygma exigua* and *Caradrina cubicularis*. The hyaline posterior wings, the crested abdomen, the form of the palpi, &c., all show that it cannot be united with *Caradrina*. The genus *Laphygma* is composed of species very nearly allied to one another, and which, though at present not numerous, are found nearly all over the globe. The

larvæ are not yet well known, especially that of our European species, which is, however, as M. Daube tells me, very common in corn-fields around Montpellier. I know not whether it multiplies there to an extent to be destructive, as is the case with its congener *L. frugiperda* in America, nor whether it has the same habits; unfortunately I have not been able to obtain from the entomologists of the South of France complete information of the larvæ which are found exclusively there, and I have more than once regretted the difficulty I have encountered from this want of precision. (Vol. I., p. 157.)

#### *Neuria.*

For a long time the species which form the type of this genus was considered nearly allied to *Dianthæcia* on account of a certain resemblance of marking between it and *capsincola*, but in fact there is no other resemblance to it in any of its stages. The larvæ do not feed in capsules, and the chrysalis has no ventral appendage. (Vol. I., p. 166.)

#### THE SPORTSMAN AND THE ENTOMOLOGIST.

The ex-member for West Gloucestershire, while not otherwise engaged, is harmlessly occupied in sending to the 'Field' newspaper reminiscences of his sporting life, from which we take the following rather amusing adventure:—

Not many years ago, during a beautiful afternoon in the month of August or September (at this moment I forget which), I was aware in one of the royal forests

of a fat buck. This buck was very shy, and, like all deer the moment they are worth killing, he had taken to hide in a thick wood, only diverging from it to feed at dusk in the evening, by such paths as he knew would, for the time being, give him the command or the wind of any ambushed rifle that might be ready for his destruction. The wilder the animal of chase, the more beauty there is in his attainment; and I, of course, became doubly anxious to procure this venison. Oh! that forest, that wild and graceful forest! how I have haunted its woods and its heaths, and furze brakes, and in its solitude never felt myself alone! In the wood of which this buck had become almost the sole tenant, there was a sweet grassy ride that he was very fond of. The wind favoured the position I wished to take; so, creeping under cover at a spot which commanded the game either way, and not a hundred yards from the open forest, I lay concealed, ear and eye on the alert for anything worthy of observation, and in the hope of some "shadow" to herald "the coming event."

My watch for the wary buck continued, when (as the lengthened shadows told me that the sun was far down in the west, and the evening was beautifully still) my attention of course became concentrated on the business of the hour. "Hark!" 'tis the startled note of a blackbird, sprung by something of which it is afraid. This is no deer; but it may be a fox. I trust in all that is good that no man's footsteps hitherward come. Such, indeed, were the thoughts that entered my head,



and such my aspirations. All then for a time remained silent; and I settled in my own mind that a fox had disturbed the black-bird. Hark! again, the gentle rustle of a bough; and presently the sharp shake of its leafy end, as if a buck, whose horns were forward and hardened, had hit a twig beyond the reach of his mouth, to bring its verdure lower down, that he may browse upon it. A dead silence, a little rustle, and a shake again on the same spot, just at the corner of the open forest, but still quite within the cover. "It must be the buck, and can be nothing else." A bough of the copse wood then leaned toward and into the woodland glade, but flew back; it had evidently bent down from some pressure from within. "Its the buck; so here goes!" Cautiously and steadily, with stealthy motion, avoiding all jerk or sudden movement, the rifle rose to my eye, and kept its level at the spot where every instant I expected to see the buck's head. The bough bent again, the leaves rustled still more, and in the same place. "It can only be the buck at browse; and now I have the view." A dull surface appears in the middle of the bush, the hue of a deer's neck, and it moves up and down; yet (perverseness personified) I can neither see ears, nor horns, nor eye, nor anything to guide me to spine or brain. Shall I shoot at a venture? Caution, from long experience, as well as habit, whispered "No." "Well," I thought to myself, "I have seen old women select the moment when horses are coming in to cross a racecourse: I have seen, man, woman, and child, where you

least expect to find them; and though I know this can't be anything but a buck, for the love of heaven I will not pull the trigger." "Now for his heart!" and I dared hardly breathe, lest my finger should touch the light trigger. The boughs then burst wide, and out came a buck—an old buck too—but such a buck, that I would rather have died than have made venison of! *It was a man*—a benign-looking brisk old man, in a dun-coloured wide-awake hat, and drabbish dress all over, in Pickwickian cut and fashion, even to shorts and ankle-gaiters, which only just met his very well-made calves.

"Good God, sir," I exclaimed, bursting out of the bushes on his startled view, "you very nearly lost your life, and beguiled me into murder."

"Sir," exclaimed the elderly gentleman, in no small alarm, "why, how and wherefore so?"

"Simply thus; you have been personating a buck in and about the bush so long, that my arm has been aching in holding my rifle at the level of your body, the trigger so light that had I sneezed I must have shot you."

"Dear me, sir," he replied. "I will instantly betake myself out of harm's way," and, so saying, disappeared round the corner, and left me most thankful that I had done no murder.

My search for the buck that evening was useless; and on meeting the keeper at a given spot I asked him who this old gentleman was.

"A Flapper," he replied, in the most business-like and concise way.

"A Flapper!" I rejoined in as-

tonishment, thinking it a very odd definition of the respectable old gentleman I had just seen. "What the devil do you mean by a 'Flapper?'"

"One of the gentlemen, sir, what comes down to the inn here a catching of insects. Lord, sir, they think as much of a fly or a grub as we do of the best buck in the forest; and goes out by night, too, as well as by day, a rubbing old bark of trees with sugar."

"Oh, ho," I remarked to myself, "the Entomological Society." Long time and success to them and their research; may every man with a rifle, in forest or woodland, be as sure of his buck as I have been, before he pulls the trigger.

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Street, Bishopsgate Without, London,  
in the county of Middlesex.—Saturday,  
November 22, 1856.

# THE SUBSTITUTE;

Or, Entomological Exchange Facilitator, and  
Entomologist's Fire-side Companion.

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No. 6.] SATURDAY, NOVEMBER 29, 1856. [PRICE 2d.

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## THE CABINET QUESTION.

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THERE is nothing perhaps more embarrassing to a young collector than to determine what to do with his insects after he has taken them and set them out. He probably appropriates as a receptacle for them the first thing he meets which he can convert to the purpose,—brother's hat-box, sister's work-boxes, a moiety of mama's cheffonier, or papa's desk, have all served their turn as apologies for a cabinet. The first fault of a beginner is that he does not pass the pins sufficiently far through the insects, and they are thus still less able to penetrate into the wood than they would be if they went further through the specimens; consequently in a little time he finds the delights of his eyes pirouetting across the boards with very inappropriate partners, accompanied by a number of little attendants, which, after the universal custom, always wait upon the great for the sake of a living. Remember then to line your receptacles, whatever they are, with

cork, which you may procure of any of the insect dealers, in sheets or pieces, ready for use, and pass the pins so far through the insects that they may have a firm hold in the cork. And to keep down the mites fix a lump of camphor in each corner, or put in a few drops of Borneote or Petroline, if you don't dislike the smell of tar: the mites cannot abide it. Still the question remains, what are the receptacles to be? Chip-boxes, in which toys are sold, do very well for collecting in, and square paste-board-boxes, about 2 inches deep and with moveable lids, serve for keeping insects in. On the Continent the general custom is to keep collections in such boxes. We have heard of one entomologist who has a most extensive collection all in such boxes, each holding but a single species, and all labelled on the back, and arranged on shelves, so that any species can be referred to at once, a good plan it may be for one with plenty of time, but we do not recommend such a subdivision. Wooden boxes 3 inches deep and 16 by 14 inches square, opening in

the centre of the depth on a hinge, and defended by a *rabbit* all round inside to keep out the dust, are most generally used in this country, and are very serviceable. But the best kind of receptacle is undoubtedly a cabinet of drawers, each covered with glass fixed in a moveable frame; the advantages being the ease with which the insects can be viewed without danger of accident by touch, and the better preservation attained by the total seclusion from the air and dust. The disadvantage pertaining to a cabinet is its great cost; but this, although most of us have suffered from it, is not really necessary. We know of instances where fabulous sums have been paid for cabinets—more than a guinea a drawer; and a beginner hearing such things, and finding that extravagant prices are still required by the makers, hesitates at spending £40 or £50 for a mere case, or gives up all idea of making a collection. We are convinced that hitherto entomologists have paid a fancy price for their cabinets; that good, sound ones, not fancy articles, could be made for half the usual charges, and that the maker who first introduces such will be a benefactor to the rising race of entomologists, and will doubtless reap his reward.

## TO CORRESPONDENTS.

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*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON.*

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*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

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*'THE SUBSTITUTE' will be continued for Twenty weeks, and will be forwarded weekly by post to Subscribers of Five Shillings, which amount may be sent in Postage-stamps to the Publisher. The Paper will always be ready on the Friday, and may be procured of KENT & CO., PATERNOSTER ROW, as well as of the Publisher.*

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## Communications Received.

S. R. MACDONALD and TIMOTHY BOBBIN, declined.

A. NAISH.—Opinions differ: some persons are equally delighted.

R. WEAVER.—Are the duplicates for sale or exchange?

---

*Several communications only wait for room.*

---

## DUPLICATES AND DESIDERATA.

---

J. B. HODGKINSON has the following insects for exchange.

## DUPLICATES.

*Thecla Rubi*,  
*Polyommatus Alsus*,  
*Argynnis Euphrosyne*,  
     *Selene*,  
*Melitæa Artemis*,  
*Vanessa C-Album*,  
*Satyrus Davus*,  
*Procris Statice*,  
*Lithosia Mesomella*,  
*Euthemonia Russula*,  
*Orgyia Fascelina*,  
*Pæcilocampa Populi*,  
*Hepialus Velleda*,  
*Petasia Cassinea*,  
*Acronycta Menyanthidis*,  
     *Myricæ*,  
     *Ligustri*,  
*Leucania Littoralis*,  
*Miana Literosa*,  
*Luperina Connexa*,  
     *Albicolon*,  
*Xylophasia Scolopacina*,  
*Triphæna Ianthina*,  
     *Interjecta*,  
*Noctua Leucographa*,  
     *Dahlî*,  
     *Depuncta*,  
*Chersotis Haworthii*,  
     *Subrosea*,  
     *Porphyreæ*,  
*Spælotis Præcox*,  
*Agrotis Cursoria*,  
*Trachea Piniperda*,  
*Tæniocampa Opima*,  
     *Miniosa*,  
*Orthosia Ypsilon*,  
*Anchoscelis Lunosa*,  
     *Litura*,  
*Euperia Fulvago*,  
*Xanthia Aurago*,  
*Dianthæcia Conspecta*,  
     *Capsincola*,  
     *Cucubali*,  
*Polia Serena*,  
     *Chi*,  
*Epunda Lichenea*,  
*Hadena Adusta*,

*Hadena Thalassina*,  
     *Glaucæ*,  
     *Protea*,  
*Aplecta Occulta*,  
     *Advena*,  
     *Tincta*,  
*Thyatira Derasa*,  
*Calocampa Vetusta*,  
*Cucullia Asteris*,  
     *Chamomillæ*,  
*Cloantha Solidaginis*,  
*Anarta Myrtilli*,  
     *Cordigera*,  
*Plusia Interrogationis*,  
     *Inscripta*,  
     *Festucæ*,  
     *Iota*,  
*Erastria Uncana*,  
*Chlorochroma Viridaria*,  
*Epione Parallellaria*,  
     *Apiciaria*,  
*Ennomos Tiliaria*,  
*Macaria Notataria*,  
*Fidonia Plumaria*,  
*Eupisteria Hepararia*,  
*Nyssia Zonaria*,  
*Tephrosia Punctularia*,  
*Anaitis Imbutaria*,  
*Coremia Erutaria*,  
     *Salicaria*,  
     *Propugnaria*,  
*Harpalyce Ruptaria*,  
     *Popularia*,  
*Ypsipetes Impluviaria*,  
*Phæsyale Cæsiaria*,  
*Cheimatobia Filigrammaria*,  
*Eucosmia Undularia*,  
*Melanippe Amnicularia*,  
*Emmelesia Hydraria*,  
     *Albularia*,  
*Xerene Albicillaria*,  
*Cabera Exanthemaria*,  
*Eupithecia Linaria*,  
     *Begrandaria*,  
*Acidalia Sylvaria*,  
     *Blomeraria*,  
     *Nitidaria*,  
*Amphysa Prodomana*,

*Sericoris Micana*,  
*Mixodes Schulziana*,  
*Cnephasia Lepidana*,  
*Clepsia Rusticana*,  
*Phoxopteryx Uncana*,  
 " *Myrtillana*,  
*Pædisca Occultana*,  
*Ephippiphora Turbidana*,  
 " *Signatana*,  
 " *Ephippiana*,  
*Coccyx Vacciniana*,  
*Heusimene Fimbriana*,  
*Retinia Sylvestrana*,  
*Stigmonota Coniferana*,  
 " *Redimitana*,  
*Choreutes Scintillana*,  
*Cochylis Stramineana*,  
*Crambus Margaritellus*,  
*Eudorea Murana*,  
*Nephopteryx Abietella*,  
*Ephestia Elutella*,  
*Exapate Gelatella*,  
*Semioscopis Avellanella*,  
*Tinea Ferruginella*,  
 " *Ochraceella*,  
*Micropteryx Unimaculella*,  
*Nematopogon Metaxellus*,  
*Eidophasia Messingiella*,  
*Gelochia Pernigrella*,  
 " *Sororculella*,  
 " *Desertella*,  
 " *Mundella*,  
*Æchmia Haworthella*,  
*Argyresthia Sorbiella*,  
 " *Conjugella*,  
 " *Retinella*,  
 " *Brockella*,  
*Elachista Apicipunctella*,  
*Lithocolletis Emberizæpen-*  
*nella*.

## DESIDERATA.

J. B. Hodgkinson wants the following species.

*Colias Hyale*,  
*Thecla Betulæ*,  
 " *Pruni*,  
 " *W-Album*,

*Polyommatus Arion*,  
*Vanessa Polychloros*,  
*Apatura Iris*,  
*Pamphila Actæon*,  
*Trochilium*, any,  
*Sesia*, both species,  
*Procris Globulariæ*,  
*Eulepia Cribrum*,  
*Lithosia Helvola*,  
 " *Complana*,  
 " *Stramineola*,  
 " *Rubricollis*,  
*Nudaria Senex*,  
*Phragmatobia Urticæ*,  
*Clisiocampa Castrensis*,  
*Endromis Versicolor*,  
*Limacodes Testudo*,  
*Platypteryx Hamula*,  
 " *Unguicula*,  
*Ptilodontis Palpina*,  
*Stauropus Fagi*,  
*Notodonta Dictæoides*,  
 " *Chaonia*,  
 " *Dodonea*,  
*Clostera Curtula*,  
*Acronycta Strigosa*,  
 " *Auricoma*,  
 " *Aceris*,  
*Diptera Orion*,  
*Ceropacha Fluctuosa*,  
 " *Ridens*,  
 " *Ocularis*,  
*Cymatophora Oo*,  
*Hydrilla Caliginosa*,  
*Leucania Pudorina*,  
 " *Obsoleta*,  
 " *Straminea*,  
*Nonagria Extrema*,  
 " *Hellmani*,  
 " *Paludicola*,  
 " *Arundinicola*,  
*Miana Expolita*,  
*Apamea Ophiogramma*,  
*Luperina Cespitis*,  
 " *Furva*,  
*Crymodes Templi*,  
*Noctua Ditrapezium*,  
*Chersotis Agathina*,

Agrotis Saucia,  
     " Lunigera,  
     " Aquilina,  
     " Ripæ,  
     " Cinerea,  
 Neuria Saponariæ,  
 Heliophobus Hispida,  
 Tethea Retusa,  
 Cosmia Diffinis,  
     " Pyralina,  
     " Affinis,  
 Cirredia Xerampelina,  
 Xantholeuca Croceago,  
 Dianthecia Carpophaga,  
 Polia Dysodea,  
 Hadenia Lutulenta,  
     " Genistæ,  
     " Contigua,  
     " Atriplicis,  
     " Rectilinea,  
     " Chenopodii,  
 Cucullia Verbasci, .  
     " Scrophulariæ,  
     " Absinthii,  
     " Lychnitis,  
 Aporophila Australis,  
 Heliothis Peltigera,  
     " Dipsacea,  
 Brepheos Notha,  
 Acontia Luctuosa,  
 Agrophila Sulphurea,  
 Pyralis Glaucinalis,  
 Aglossa Cuprealis,  
 Ebulea Verbascalis,  
     " Ciliatis,  
 Scopula Ferrugalis,  
 Odontia Dentalis,  
 Pionea Margaritalis,  
 Spilodes Sticticalis,  
     " Cinctalis,  
 Botys Lancealis,  
 Mecyna Asinalis,  
 Nola Strigulalis,  
 Phorodesma Bajularia,  
 Chlorochroma Vernaria,  
 Pericallia Syringaria,  
 Epione Advenaria,  
 Ennomos Erosaria,

Aventia Flexularia,  
 Aspilates Citraria,  
 Nyssia Hispidaria,  
 Boarmia Consortaria,  
     " Roboraria,  
     " Abietaria,  
 Cleora Viduaria,  
 Tephrosia Laricaria,  
     " Extersaria,  
 Coremia Ligustraria,  
 Anticea Rubidaria,  
     " Berberaria,  
 Harpalyce Picaria,  
     " Sagittaria,  
     " Marmoraria,  
 Lobophora Hexapteraria,  
 Acasis Viretaria,  
 Triphosa Certaria,  
 Scotosia Rhamnaria,  
     " Vetularia,  
 Phibalapteryx Vitalbaria,  
     " Tersaria,  
 Melanippe Rivaria,  
 Emmelesia Tæniaria,  
     " Bifasciaria,  
 Xerene Adustaria,  
     " Procellaria,  
 Ephyra Poraria,  
     " Orbicularia,  
 Eupithecia Coronaria,  
     " Debiliaria,  
     " Innotaria,  
     " Piperaria,  
     " Succenturiaria,  
     " Irriguaria,  
     " Venosaria,  
     " Togaria,  
     " Consignaria,  
     " Subnotaria,  
 Dosithea Bisetaria,  
     " Rusticaria,  
     " Ornataria,  
     " Immutaria,  
 Acidalia Marginepunctaria,  
     " Perochraria,  
     " Cæspitaria,  
     " Subsericearia,  
     " Inornaria,

Acidalia Degeneraria,  
 Timandra Emutaria,  
 Ania Emarginaria,  
 Siona Dealbaria,  
 Pachycnemid Hippocastanaria  
 Minoa Euphorbiaria,  
 Halias Quercana,  
 Enectra Pillerana,  
 Peronea Maccana,  
 " Umbrana,  
 Spilonota Pauperana,  
 Sideria Achatana,  
 Sericoris Littorana,  
 Mixodia Hawkerana,  
 Phtheochroa Rugosana,  
 Phoxopteryx Upupana,  
 Ephippiphora Obscurana,  
 Retinia Turionana,  
 Carpocapsa, all of them,  
 Opadia Funebrana,  
 Catoptria Pupillana,  
 " Citrana,  
 " Westwoodiana,  
 Lobesia Servillana,  
 Eupæcilia Ambiguana,  
 " Simplana,  
 Chrosis Andouinana,  
 Argyrolepia Dubrisana,  
 " Aeneana,  
 Cochylis Dipoltana.

These are a few of my wants :  
 there are of course a great many  
 of the rarer species not noted, and  
 I have all, or nearly so, of the  
 species enumerated as wanting. I  
 have some hundreds of species,  
 besides those marked, for ex-  
 changing with.—JAMES B. HODG-  
 KINSON, 16, Bolton Street West,  
 Preston.

[N.B. Change of residence.]

### CAPTURES.

*Lepidoptera, &c., near Wells.*—  
 On the 4th of September I took a

trip to the hills round Wells, and  
 there succeeded in capturing a  
 few of the local species, including  
 the following:

Hipparchia Semele,  
 Polyommatus Ægon,  
 " Corydon,  
 " Agestis.

I have also found the larvæ of  
*Sphinx Ligustri* and *Smerinthus*  
*Populi* in great abundance this  
 season, and several specimens of  
*Gryllus viridissimus* have been  
 found here.—JOHN DRAKEFORD,  
*Sidcot School, near Weston-super-*  
*Mare, Somersetshire; November*  
*10, 1856.*

*Lepidoptera at Looe, &c.*—I  
 send you a list of *Lepidoptera* taken  
 by me during a six weeks' stay at  
 Looe, a small fishing town on the  
 south coast of Cornwall, about  
 eighteen miles west of Plymouth.  
 The whole coast of this tract of  
 Cornwall, from Rame Head on  
 the east to Deadman Point on  
 the west, is of the clay-slate for-  
 mation, and rises into considerable  
 cliffs, interrupted here and there  
 by the mouths of small streams,  
 or hollowed out into snug coves,  
 in some of which the ceaseless  
 action of the waves upon the rocks  
 has elaborated a beach, of what  
 appears to be sand, but is really  
 comminuted slate. In such nooks  
 as these, completely shut out from  
 the world, the eager entomologist  
 forgets his calling. He lays down  
 his net and uncovers his head, and  
 in Nature's temple, with the rock  
 behind and around and the sea in  
 front, he lifts up his heart to "The  
 Lord of all Power and Might, the  
 Author and Giver of all Good,  
 who made the Earth and the Sea  
 and all things that are therein."  
 This done, if he be a swimmer, he



whips off his clothes and dashes in through the sparkling surf laughing and even roaring with the laughing and roaring waves. O the joys of such a bath, never to be forgotten! He turns a lingering look on the scene behind: with a light heart and a brisker step once more mounts the cliff, and is soon up to his middle in ferns and foxgloves. The cliffs were not, however, my only haunt. A small stream empties itself into the harbour at Looe, which at high tide becomes an arm of the sea, and is clothed on both sides with wood, chiefly oak, for two or three miles from its mouth. My leisure time was pretty equally divided between these woods and the cliffs, as the list I send will show. The nomenclature is Doubleday's for the Macro-Lepidoptera and the Tortricina, Wood's for the Crambina, and Stainton's for the Tineina. The date, wherever given, refers to the first capture of that species; and those captures without a date were all between the last week in June and the first in August. The first specimen of *Trochilium Ichneumoniforme* was found on a bank close to the sea where the coast was low: it had not long emerged from the pupa-case, which was lying beside it. I afterwards took two on the wing among some Neuropterous insects similarly coloured, from which it was very difficult to distinguish them. *Arctia Villica* was flying in the heat of the day on the cliffs, and a glorious sight it was to me, who saw it for the first time. The capture of *Stauropus Fagi* has been already recorded in the 'Intelligencer.' I tried for *Diptera*

*Orion* with sugar in the wood, where I took three in the daytime, but in vain. Indeed, I was altogether disappointed in the sugar, taking nothing by it but *T. Batis*, *P. Herbida*, *H. Thalassina*, and other common things. *Stenia Punctalis* and *Asopia Flammealis* I found frequently on the cliffs here, and also near the Logan Stone and the Land's End, where I also met with *P. Ægon* and *A. Selene*, the former confined to about half an acre of heath near the sea. *Botys Lancealis* was not uncommon in the grassy outskirts of the same wood, in the inner tracts of which I took *Hypena Crassalis* and *Hypenodes Albistrigalis* in tolerable plenty. I was struck with the beautiful dark varieties of *A. Prunaria*, (all males, the females being generally very light, some with a darker border); and *B. Repandaria* with the black fascia was about as common as the paler variety. *E. Soberinaria* (?) was taken on the granite rocks towards the Land's End. The fewness of the *Tortricæ* and *Tineæ* in the woods, compared with those of Worcestershire, was very noticeable. Of larvæ I took very few; but I think I have about a dozen *Cucullia Scrophulariæ* pupæ from larvæ taken on the Water Betony: they were both blacker and yellower than *Verbasci*, of which I also found several on the Mullein. One day I found two yellow *Bombyx* cocoons, evidently male and female, linked together and hanging on a reed near the sea. My expectations were raised high; but they turned out to be only *C. Neustria*. I also took the larva of *L. Monacha*, and, I believe,

of *O. Gonostigma*, but the former came out cramped during our journey home, having been in pupa exactly fourteen days, and the latter died.

*Lepidoptera at Looe, &c.*

*Colias Edusa*, Aug. 5  
*Polyommatus Argiolus*, July 28  
 " *Egon*, July 2  
*Argynnis Paphia*  
 " *Selene*, July 2  
*Melitæa Athalia*, June 25  
*Vanessa Atalanta*, June 25  
*Cynthia Cardui*, July 17  
*Satyrus Semele*, July 2  
*Pamphila Linea*, July 29  
*Trochilium Ichnemoniforme*,  
 July 30  
*Sphinx Ligustri*, June 27  
*Arctia Villica*, June 23  
*Orgyia Pudibunda*, June 23  
 " *Coryli*, June 26  
*Lasiocampa Quercus*, Aug. 3  
*Stauropus Fagi*, June 25  
*Acronycta Ligustri*, June 30  
*Diphthera Orion*, June 25  
*Miana Furuncula*, July 29  
*Hadena Thalassina*, July 5  
*Aplecta Herbida*, July 5  
*Thyatira Batis*, June 25  
*Erastria Fuscula*, June 20  
*Pyrausta Punicealis*, July 20  
 " *Cespitalis*, July 14  
*Stenia Punctalis*, July 2  
*Asopia Flammeal*, July 12  
*Ebulea Crocealis*, July 15  
*Botys Lancealis*, June 27  
 " *Flavalis*, June 27  
*Stenopteryx Hybridalis*, July 20  
*Hypena Crassalis*, June 23  
*Hypenodes Albistrigalis*, July 17  
*Hemithea Cythisaria*  
*Angerona Prunaria*, June 27  
*Macaria Notataria*, July 24  
*Fidonia Atomaria*, June 25  
*Boarmia Repandaria* (banded)  
*Cleora Lichenaria*, July 2

*Tephrosia Crepuscularia*, July 19  
 " *Extersaria*, June 27  
*Gnophos Obscuraria*, July 29  
*Eusebia Bipunctaria*, July 17  
*Coremia Propugnaria*, June 23  
*Anticlea Sinuaria*, July 23  
 (worn)  
 " *Rubidaria*, June 23  
*Harpalyce Fulvaria*, June 23  
 " *Popularia*, June 24  
*Eucosmia Undularia*, June 26  
*Venilia Macularia*, June 23  
*Melanippe Rivaria*, July 11  
 " *Amnicularia*, July 19  
*Emmelesia Rivularia*, July 25  
 " *Hydraria*, June 28  
 " *Decoloraria*, July 25  
*Zerene Adestaria*, June 30  
*Bapta Temeraria*, June 23  
*Eupithecia Debiliaria*, June 27  
 " *Plumbeolaria*, June 27  
 " *Sobrinaria* (?) July 1  
 " *Centaurearia*, July 1  
 " *Pumilaria*, July 25  
*Dosithea Immutaria*, June 30  
 " *Reversaria*, July  
*Acidalia Ossearia*, June 29  
 " *Sylvia*, July 5  
*Halias Prasinana*, July 4  
*Tortrix Xylosteana*, June 29  
 " *Branderiana*, June  
*Amphysa Gerningiana*  
*Dictyopteryx Lædingiana*, July  
*Noctocelia Udmanniana*, July 18  
*Orthotænia Striana*  
*Bactra Lanceolana*  
*Hypermercia Angustana*  
*Batodes Angustiorana*  
*Pedisca Profundana*  
*Endopisa Nebritana*, June 27  
 " *Pisana*, June 27  
*Stigmonota Redimitana*, July  
 " *Trauniana*, July  
*Dicrorampha Artemisiana*, July  
*Catoptria Ulicetana*, July  
 " *Hypericana*, July  
 " *Hohenwarthiana*, July  
*Lobesia Reliquana*

Xanthosetia Hamana, July 19  
 Crambus Pinetellus, July 5  
     " Cerusellus  
     " Culmellus  
     " Pygmæus  
 Phibalocera Quercana, July  
 Ilythia Sociella  
 Phycita Ornatella  
     " Nebulella  
     " Binævella  
     " Consociella  
     " Bistriga  
 Plutella Nemorella  
     " Dentella  
 Cerostoma Costella  
     " Radiatella  
 Elachista Cygnipennella  
 Chrysocorys Festaliella  
 Butalis Grandipennis  
 Gelechia Terrella  
 Ecophora Flavifrontella  
 Chrysoclista Flavicaput  
 Gelechia Cinerella  
 Gracilaria Swederella.  
 —E. HORTON, *Wick, Worcester;*  
*November 12, 1856.*

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### COMMUNICATIONS.

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*A New Clap-Net.*—Having met with a friend, a manufacturer of telescopic tubes, &c., I have induced him to make for me some handles for a Clap-Net, thinking to obtain one more convenient than the one I have hitherto used. Now it is finished I find it so superior to what I had at first anticipated that it has induced me to lay a description of it before your readers, thinking, perhaps, that some of them would like to have the same convenience (at so little cost) for themselves. The whole length, when closed, is 24 inches, the diameter of each han-

dle being  $\frac{1}{2}$ -inch, and when drawn out it reaches 4 feet 10 inches. It is made in three joints; the second and third sliding into the first. The third joints, which of course are smaller than the others, are made of flexible canes, and joined at the point by vulcanised India-rubber. When closed it is very portable, and when opened it is both firm and strong, forming the most compact thing of the kind I have ever yet seen; the whole cost being 4s. 6d. If any of your readers should like any more information respecting it, I shall feel a pleasure in sending them more minute particulars, or obtaining for them the article itself. — J. B. STONE, *Lupin Street, Birmingham.*

*Forcing Lepidoptera.*—I wish to know if any of your readers have noticed a similar case to the following:—On the 17th of September I had some larvæ of *Vanessa Atalanta* that became pupæ, and which I suspected would so remain until the following spring, but on placing them in a warm room, they emerged on the 5th of November. — THOMAS CLARKE, *Bedern Bank, Ripon; November 13, 1856.*

*How to Catch a Falling Larva.*—I have heard a great many entomologists complain that when they try to take a larva from a plant it very often falls to the ground and cannot be found; now when it drops, it generally fastens a fine thread or silk to the bough or leaf it falls from and slides down it to the ground, but if the person passes his hand under the place the larva was in, when first seen, it will come in contact with the thread, and having found the

thread it is easy to trace its course to the ground, and the poor larva becomes a captive. I have found this plan answer in most cases, and think others may derive benefit from it, as many a rare insect is lost by losing the larva. If you think this is worth inserting in the 'Substitute,' you are at liberty to do so.—E. R. PRIEST, 14, *Parliament Street*; November 22, 1856.

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### NEW BOOKS.

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ELEMENTS OF ENTOMOLOGY; an Outline of the Natural History and Classification of British Insects. By W. S. DALLAS, F.L.S. Nos. 1, 2 and 3, 6d. each. Van Voorst, 1, Paternoster Row.

We have waited till this work was getting rather advanced, before bringing it under the notice of our readers. It is never fair to judge of unfinished works; even now, who knows how far numbers 11, 12 and 13 may disappoint the expectations we have formed by a perusal of numbers 1, 2 and 3. Besides, the opening chapters of all books are apt to be tedious. The novelist, to be sure, often appears to avoid this, by commencing at the first start with some very animated conversation, and then after he has kept up the interest for some ten or twelve pages, he proceeds to tell you all the histories and antecedents of the persons whose conversation has already interested the reader. But the writer of a scientific work could hardly treat his subject in this way; he *must* begin at the begin-

ning, and so we presume Mr. Dallas thought, when he devoted his first chapter to the consideration of the enquiry, "What is an Insect?" Having satisfied us on this head, he proceeds to give us a chapter "Of the Structure of Insects in general," embellished with a wood-cut representing the head and mouth of a beetle. The mouth, in insects, as in most animals, is an organ of great importance, and being the entrance through which the stomach receives its supplies, is necessarily an important consideration in animal economy. Almost every order of insects has the mouth constructed in a different way, so that we really feel surprised to find how great is the variety of modifications which the same organs undergo, in order to fit them for obtaining nutrition for the insect from dead or living organizations, in a liquid or solid state.

The next chapter introduces us to the "Sexes and Transformations of Insects," and though so much has been written about "transformations," and we have such excellent notices on this head in Kirby and Spence's 'Introduction to Entomology' (which probably, in its cheap form, is possessed by every one of our readers), still, in a systematic work like this of Mr. Dallas, we do not see how he could have avoided some notice of that mystery in insect-life.

Then follows a chapter of 'Classification and Nomenclature,' and we think we show no great amount of penetration, in prophesying that it will not give entire satisfaction to every one, but we do not think that this will

be any peculiarity of Mr. Dallas' arrangement, as it is the common fate of all systems of classifications to cause dissatisfaction to some, and were this not so, man would scarcely be human.

At Chapter V. we come to the Coleoptera or Beetles, a class of insects which during the next three months are more sought after than any others, and here we will give an extract to enable our readers to judge for themselves; for after all, they can better judge of the nature of the book from a sample than from anything we might say of it. We might have a bias for, or against the author, and might therefore, unwittingly, speak too highly, or else under-rate the usefulness of his book.

"Besides the common tiger-beetle (*Cicindela campestris*) just referred to which may be met with in almost all sandy or gravelly places, and several other species of the genus *Cicindela*, which are more limited in their distribution, we have in Britain an immense number of other predaceous beetles, the scene of whose exploits is on the ground. Of these, a great number agree with the beautiful insect above described in so many important characters, that they are considered to form a single great group, the tribe of the *Geodephaga*, or Ground Predaceous Beetles. In all these insects the outer lobe of the maxillæ forms a slender-jointed organ, resembling a short palpus of two joints, which intervenes between the true maxillary palpus and the biting part of the maxilla,—hence they have been described as possessing six palpi. The maxillæ themselves terminate in a sharp

hooked point, which in some cases (as in the *Cicindela*) is moveably articulated to the body of the organ. The legs are constructed solely for running upon solid surfaces, and the tarsi are all composed of five joints.

"Unlike the *Cicindela*, which, as we have seen, delight in the brightest sunshine, the majority of these insects are nocturnal in their habits, and keep themselves concealed during the day under stones and clods of earth, in the clefts of banks or beneath the fallen leaves of trees in woods, where they require to be diligently sought by the entomologist. At nightfall they come forth in search of their prey, which they pursue for the most part on foot, as they appear to have much less power of wing than the tiger-beetle.

"There are, however, many exceptions to the generally nocturnal habits of the insects of this group,—a great number of the smaller, brilliantly metallic species are almost as active as the *Cicindela* under the hottest sun, and take wing with nearly equal facility. Many of these lovely little creatures may be found in profusion running about on the mud at the margins of ponds, when these begin to dry up in summer, whilst others, such as the species of the genera *Amara* and *Pæcilus* are so abundant on our garden-walks that they are well known, even to children, under the name of *sunshiners*. Most of the more brilliant species, in fact, appear to be more or less diurnal in their activity, whilst those which exhibit black or dark colours select the congenial obscurity of night for their prowlings.

"The larvæ of most of the species are of a roving disposition, and wander about like the perfect insects under cloud of night in pursuit of their prey. Their whole upper surface is covered with a horny skin, which is harder upon the head and prothorax; the head is armed with a pair of formidable jaws, and the legs are well formed and stout. They are excessively gluttonous, and destroy great quantities of caterpillars, and the larvæ of other herbivorous insects, which indeed constitute the principal food of most of the predaceous beetles, both in their larva and perfect states, although in this respect they are by no means particular, but will feed without the slightest remorse even upon individuals of their own species.

"The largest of the common British beetles of this group are the species of the genus *Carabus*, several of which are an inch or more in length. I shall only refer to two of the most abundant and generally distributed of these, — the *Carabus hortensis*, which is exceedingly common in gardens, and the *Carabus violaceus*, which inhabits the open country in almost equal profusion. Both these beetles are full an inch in length, and of a black colour. The former has the margins of the thorax beautifully tinted with a metallic purple; the elytra are of a fine coppery or brassy tint, delicately grained all over, and exhibiting three rows of small impressed dots. It is found abundantly in the gardens of the suburbs of London, and in those parts where the gravel footpaths have not yet given way to paving-stone, nothing is more common than to see

these insects lying dead upon the paths in the morning, crushed beneath the unheeding heels of nocturnal wanderers.

"The *Carabus violaceus*, from inhabiting the open fields and heaths, is not liable to have the thread of his existence cut short in this unceremonious manner, and he often continues his wanderings under the bright morning sun. This fine beetle is entirely of a bluish black, with the whole upper surface finely grained; the margins of the thorax have a delicate violet tinge, and the outer margins of the elytra are tinted with coppery-purple."

Perhaps, when Mr. Dallas impinges upon the water-beetles, we may give a further extract.

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Printed and published by EDWARD NEWMAN, Printer, of No. 9, Devonshire Street, Bishopsgate Without, London, in the county of Middlesex.—Saturday, November 29, 1856.

# THE SUBSTITUTE;

Or, Entomological Exchange Facilitator, and  
Entomologist's Fire-side Companion.

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No. 7.]

SATURDAY, DECEMBER 6, 1856.

[PRICE 2d.]

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## WINTER WORK.

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MANY young collectors think that when winter comes there is no more to be done out of doors. We used to think so too once, but we have learned that it is a great mistake; and although the idea that out-door employment ceases when the net is laid aside is not so prevalent as it used to be, yet collectors are not sufficiently impressed with the necessity of searching during the winter for insects that they will not get half so easily otherwise.

By Lepidopterists hosts of pupæ are to be obtained by digging *gently* at the roots of trees, and at the bottom of fences and walls. The stooping necessary often makes the back ache, but the prizes gained make the heart glad. There is a pleasure in turning out a pupa that must be felt to be appreciated. When you have dug round the tree, see if there be any loose bark upon it, if so, there is probably a pupa there; it may be in a cocoon: then see if there be any thick

moss on the trunk or the spreading roots; ten to one there are some *Bombyces* laid up under it. You search a tree in this way and possibly find nothing; go on to the next, and the next, nothing disheartened, remembering that, according to the doctrine of chances, it could be mathematically demonstrated that the longer you are unsuccessful the greater the probability of your ultimate good fortune. If you shake carefully over a sheet of paper the moss you have scraped off the tree you will be likely to find some small pupæ or hibernating larvæ; more frequently the latter are discovered in moss growing on the ground, especially among underwood. You may vary your employment and rest your back by looking on poplars, willows and alders, for the hard cocoons of the *Cerura*, hard to see as well as to feel, but delightful to find: these you must cut out with a piece of the bark attached all round, taking care of course to cut deep enough to avoid injuring the pupæ. If you study Micro-Lepidoptera a search among the fallen leaves will give

you hosts of pupæ laid up snugly in their mines: *Lithocolletis irradia* was first reared in this way. Gather stems of *Umbellifera*, thistles, teasles and herbaceous plants of all kinds, and as many seed-heads of all sorts as you can; keep them out of doors till April, then take them into a room, and all summer long you will have arrivals of silent though active visitors.

If you are a Coleopterist your digger will find profitable employment in ripping the loose bark off felled timber, turning up beetles in the larva, pupa and perfect state. Those who live near old trees should now be happy; their decayed wood is a perfect mine of wealth to a Coleopterist. Puff-balls, now ripe, yield, besides their dust, *Lycoperdina Bovista* and *Cryptophagus Lycoperdi*: one wonders how they can live in such a smother. *Fungi* and *Boleti* generally are now worth searching. But the beetle-hunter now revels in the joys of searching for the 'moss-troopers.' Let moss grow where it will it always affords winter quarters to millions of beetles. Shake well a handful over a large sheet of paper and see how they come tumbling out: some set off and run for their lives; stop them, if you want them, and put them into your laurel-bottle. Throw away

the moss, and place the shakings into a bag or canister for examination at home after the sleepers therein have been awakened by the warmth of your room. Repeat the operation as long as you like, and then you will find that you have abundant employment for those days when you cannot make active demonstrations out of doors.

*Hymenoptera*, *Hemiptera* and *Diptera*, often make their appearance among moss. If you want these now is your time; if not, perhaps some friend would thank you for them; if neither, think before you throw them away whether you ought not to want them, to learn something about them.

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#### TO CORRESPONDENTS.

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*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON.*

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*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

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*'THE SUBSTITUTE' will be continued for Twenty weeks, and will be forwarded weekly by post to Subscribers of Five Shillings, which amount may be sent in*



*Postage-stamps to the Publisher. The Paper will always be ready on the Friday, and may be procured of KENT & Co., PATERNOSTER Row, as well as of the Publisher.*

Several communications only wait for room.

G. SMITH.—Your note of 20th October, inserted in No. 4, was held back because it seemed that the two pairs of *Phlogophora empyrea* therein mentioned were also referred to in your note of the 27th, inserted in No. 3; but we afterwards saw that the note of the 20th says "two pairs," while that of the 27th says "three," and so we inserted it. There is a further discrepancy. Mr. Hemmings in his note of the 30th (p. 31) says you captured "three" on the 16th: these are not mentioned by you, unless the date of the "15th" is an error for the "14th." Can you clear up these differences?

## DUPLICATES AND DESIDERATA.

*Lepidoptera*.—Will you please to insert in an early Number the following list of insects I have to spare, and what I want?

*Thecla Rubi*,  
*Polyommatus Alsus*,  
*Lithosia complanula*,  
*Hepialus velleda*,  
*Diloba cæruleocephala*,  
*Cymatophora diluta*,  
*Acronycta Menyanthis*,  
*Leucania lithargyria*,  
 " *conigera*,

*Heliophobus Popularis*,  
*Apamea gemina*,  
 " *leucostigma*,  
*Miana literosa*,  
*Celæna Haworthii*,  
*Agrotis vallisera*,  
 " *Tritici*,  
*Xanthia cerago*,  
*Cosmia diffinis*,  
*Dianthecia Cucubali*,  
*Polia flavicincta*,  
*Epunda Æthiops*,  
*Hadena rectilinea*,  
*Cloantha Solidaginis*,  
*Xylina rhizolitha*,  
 " *petrificata*,  
*Mecyna Asiualis*,  
*Coremia erutaria*,  
 " *olivaria*,  
*Phibalapteryx lignaria*,  
*Melanippe tristaria*,  
*Cabera exanthemaria*,  
*Eupithecia rufifasciaria*,  
 " *Linaria*,  
 " *subfulvaria*,  
 " *palustraria*,  
*Strenia clathraria*,  
*Eudorea pallida*,  
*Sericoris micana*.

## Wanted.

*Notodonta dictæa*,  
 " *dictæoides*,  
*Cymatophora ridens*,  
*Eurymene dolobraria*,  
*Speranza conspicuaria*,  
*Anticlea sinuaria*,  
*Eucosmia andularia*,  
*Zerene adustaria*,  
*Abraxas pantaria*,  
*Bapta taminaria*,  
*Ephyra trilinearia*,  
*Aleucis pictaria*,  
*Dosithea ornataria*,  
*Bradyepetes amataria*.

—THOMAS H. LANGCAKE, *Beeston Hill, near Leeds*; November 17, 1856.

## CAPTURES.

*Cerambyx Heros*? at Chatham.  
—About the end of July or beginning of August was given to me alive a large black male *Cerambyx* (*C. Heros*?), which had been captured in this dockyard. The body of this beetle is nearly 2 inches long, and each of its antennæ is  $3\frac{1}{4}$  inches long. This is the fifth specimen of this beetle I have seen; three of them being in my collection, a male and female having been captured in 1853; one, a male, in the collection of a friend; and one which I saw in the hands of a fellow-apprentice about twelve years ago, the whole of which were captured in this dockyard. Can any of your readers inform me whether the capture of this beetle has been recorded before in England, and if so, where; also of what country it is a native?—W. CHANEY, 20, *Upper Britton Street, New Brompton, near Chatham, Kent*; November 9, 1856.

*Heliophobus hispida*.—I beg to inform you that I have a specimen of *Heliophobus hispida* captured on the 9th of September last by my little sister. I placed it in my collection as *H. Popularis* until I saw the description in the 'Manual.'—CHARLES ROGERS, 11, *St. Andrew's Street, Plymouth*; November 14, 1856.

## COMMUNICATIONS.

*Hybernating Larvæ and Pupæ*.  
—In pages 41 and 42 of 'The Substitute' a question is asked

upon the above subject. I simply say that the three species of *Lasiocampa* there mentioned are all common here; and according to my observations *Rubi* and *Quercus* live through the winter in the larva state, *Rubi* being full grown before it hybernates for the winter. *Quercus* cannot be said to hybernate, as I find it throughout the winter on sunny days feeding, but, unlike *Rubi*, they are still small, and do not increase much in size until the spring is far advanced. I certainly never saw or had a larva of *L. Quercus* that made its cocoon in the autumn as your correspondent states. *Trifolii*, in economy, is distinct from the two others of the genus in this particular, viz., the eggs of this species do not hatch until March, so that it is in the egg state six months; thus in March the larva leaves the egg, and the imago appears at the latter end of August; so that the whole of the metamorphoses is completed in six months. The information where to find them is as follows:—*Rubi* larvæ may be found on heaths and commons, and particularly downs, throughout the winter, hybernated under the earth about furze bushes. *Quercus* I find on warm days in spring and winter in hedges. *Trifolii* being in the egg state throughout the winter, and, moreover, very local, no benefit can arise to any one to know what situations they are in, as practically it would not answer to hunt after eggs that are deposited singly and without any adhesive matter among grass on cliffs and slopes; but if any one would like to see the eggs of this species I have now a good number, and

shall be pleased to forward them to any one who may apply for them. In one of the Numbers of the 'Intelligencer' or 'Zoologist' (I cannot recollect which), a person showed his disbelief in the fact of *Lithosia* larvæ eating grass or other plants than lichens. I will just observe that *Lithosia complana* was taken among grass, that it ate grass, and I fed it upon grass for many weeks. They were very young when taken, and about this time two years ago I had them eat the leaves of forest trees also, and I have had them refuse any thing and every thing I offered them.—J. J. READING, *Plymouth*; November 20, 1856.

*Specimens of Zygenidæ requested.*—If any of your correspondents would favour me with any specimens of the *Zygenidæ* I should be very much obliged.—F. B. W. WHITE, 2, *Athole Place*, *Perth*; November, 19, 1856.

"*Who bids for the Bugs?*"—Since the spirited appeal on behalf of this order of insects, which appeared in No. 24 of the 'Intelligencer,' I have been anxiously awaiting the announcement that some one was going to make a bid for them. It would doubtless be a great gratification to many to hear that a volume on this order was in preparation; such as Walker on the Diptera, Stainton on the Tineina, Smith on the Bees. Why is so much attention devoted to the Lepidoptera exclusively? Mainly, I imagine, because through the numerous works on them that have been published and are still publishing, the collector is able, by his own study, or with the assistance of others, to make something of them. He can

talk about them, write about them intelligibly, arrange them, know what he has and what he wants, where and when to look for them. Even in Lepidoptera almost every one that collects them now collects the Tineina; but it was not so in England before Mr. Stainton set to work at them, correcting the nomenclature, studying their habits, and communicating all the information that he could gather. They were neglected by a great many, simply because they could make nothing of them. And so it is with the Hemiptera: without accessible books containing specific descriptions, without ready access to correctly-named collections of good specimens, the student in any branch of Natural History makes excessively slow progress. During an excursion to the New Forest in September, I collected such of the Hemiptera as came in my way whilst looking for other orders, but of those which I brought home I could make out the specific name of only two; one is the *Corizus Hyoscyami*, and I beg leave to ask a question about it. What has it to do with the *Hyoscyamus*? Do, I pray of those who can supply it, let us have some information about the bugs, or any of them, one species only excepted.—BENJ. COOKE, 49, *Ardwick Place*, *Manchester*; November 22, 1856.

*Answers to Queries in 'The Substitute.'*—In reply to Mr. Lubbock's enquiry I have some hundreds of a case-bearer now feeding, bred from a case which never had a male near it: they are feeding upon lichen. [What is the name of the case-bearer?] In reply to Mr. Barrett's enquiry,

here we find the cocoon of *Eriogaster lanestris* on thorns and rose-stems around old pits. The larva of *Lasiocampa Quercus* should be now about an inch long, and may be found dormant amongst dead leaves. *L. Trifolii* is still in the egg: these hatch in February and March. *L. Rubi* is hibernating, curled up in a cavity in the earth, or in dead leaves. *G. Ilcifolia* is now in pupa, in a white silken cocoon.—C. S. GREGSON.

I have on several occasions seen larvæ which had issued from a case of *Fumea nitidella*, in which, as is well known, the female deposits her eggs. There is every reason to believe that these eggs were unimpregnated, because I found the cases directly after they were spun up, and long before the imago appeared. I am tolerably sure that I have had larvæ from cases which the larvæ were carrying about when I found them at Black Park, and to which cases no male imago had access; but I cannot find the memorandum I made at the time, and so will not be positive.—J. W. DOUGLAS, *Lee; November 22, 1856.*

*Sirex gigas*.—On the 23rd of August, 1855, I took, for the first time, *Sirex gigas*: it was in company with a number of wasps, and apparently eating a pear when I first molested it; it flew rapidly away to another part of the garden I was in. When captured it used its ovipositor like the Ichneumonidæ.—JOHN D. HEAD, *Sidcot School, near Weston-super-Mare, Somerset; November 10, 1856.*

*Announcement of Duplicates*.—In No. 1 of your valuable periodical you gave us a very capital

article on the exchange of duplicates; but I am sorry to say that part of it which related to the "*quid pro quo*" system has been entirely overlooked by most of your numerous readers, for I have myself written an immense number of epistles begging specimens, and yet I have not in any one single instance received an answer to those letters which did not contain an offer to exchange; and having exhausted my stock I am now unable to obtain any desiderata. Now, Mr. Editor, this state of things will never do; it is a disgrace to the entomologists of Great Britain, and will, no doubt, do more to deter young hands from following this delightful study than any thing else. Surely those persons who do not intend to GIVE AWAY their specimens should say so, and not take to themselves the public credit of being magnanimous without the private cost; and my object in asking you to let this letter appear is to beg that all entomologists will, in future, state whether they intend or not to part with specimens without a return, in order that we poor novices may not waste our postage-stamps to no purpose. I could say a great deal more on this subject, but, fearing to encroach too much on your space, I shall conclude by subscribing myself—ONE OF THE SUFFERERS.

*Attracting Male Moths*.—I have succeeded in obtaining male moths by placing on the body of a tree, in the evening, females that have been unfortunate enough to emerge into the imago state with wings crumpled and unfit for use. I should recommend all those who

are not acquainted with this fact to try the plan, as there is almost a certainty of getting a stock of eggs as well as the male moth. — R. H. FREMLIN, *Wateringbury*; November 18, 1856.

[What are the species you have tried?]

*Ægeria Bembeciformis*. — I should feel exceedingly obliged if any of your readers will favour me with its history. I do not understand it, although I take the insect every summer in abundance. It appears in July on the trunks of the black poplar, *Populus nigra*. The larvæ seem to feed for two or three years, for I can find them of various sizes at the same time that the moth makes its appearance. I have counted above sixty empty pupæ projecting out of one tree, and I have no chance of locating the species on a tree that is not infested with it, for all the trees in this locality are infested with it, more or less. — JOSEPH CHAPPELL, 2, *Partington Street, Tontine Street, Salford*; November 19, 1856.

*Odontaus mobilicornis*. — In the answers to correspondents in No. 3, it is stated that this beetle is not given by Stephens as British, which is correct, but it might have been added that it is the same insect as *Bolbocerus mobilicornis* of Stephens' 'Manual.' In the 'Proceedings of the Entomological Society for 1854' is a translation of an interesting account in the French 'Annales' of a successful method of capturing this beetle, from which I make the following extract. — "I station myself upon a road which is rather lower than the field (of lucern), and thus by stooping a little I

have my western horizon just above the stems of the lucern: this circumstance is indispensable for success, for it is between eight and nine o'clock (in June and July) that I find the insect flying heavily over the lucern, and if it be not projected upon the sky it is impossible to see it on account of the obscurity. To ensure a successful result it is necessary to have a sky without clouds and an atmosphere very hot and calm, without which the insect does not fly. When the weather is favourable I take in half an hour four or five specimens, but more males than females." Does "Carabus" capture this insect? — J. W. DOUGLAS, *Lee, Kent*; November 22, 1856.

*Cerura vinula*. — This year I obtained several larvæ of *Cerura vinula* at Battersea. Not having seen any before I was anxious to rear them, and accordingly placed these in my box with the leaves of the trees I found them upon. The next day I found that not one of the leaves had been touched, and in a week's time they were all dead, having starved themselves. Will you be kind enough to insert this in 'The Substitute?' perhaps some of your correspondents can oblige me with the reason of it. — EDWARD R. PRIEST, 14, *Parliament Street*.

*An Entomological Ramble in the Isle of Wight.*

[Continued from p. 45.]

We are soon roused, however, from our recumbent position in the clover by the angry buzz of two or three bees (whom we have somewhat incommoded by sitting upon), and we hasten to escape

before the enraged insects have recourse to more effective weapons than buzzes. We walk on by the side of the hedge watching (like Mr. Micawber) for something to "turn up." How hot it is! We feel quite incompetent for the exertion of beating, so we stroll lazily along till we reach a small clearing where some clover has been cut down. Directly we reach the spot our eye rests upon an insect settled with expanded wings on a fallen clover-stalk, whose size, form, and beautiful harmony of colour, proclaim it to be *Cynthia Cardui*. We know how active and easily-alarmed this species is, so we approach it with great caution, holding our net with the mouth downwards, so as to drop it over the insect when a fitting opportunity occurs. A few seconds elapse and *Cardui* closes his wings. Now or never! Down goes the net with a sudden swoop! Not sudden enough to entrap *Cardui* though. Quick as thought he glances from his seat at the very instant the net is falling, and in another moment is half across the field, where, strange to say, it is very difficult to follow his flight, for, although so large and conspicuous an insect when at rest, yet, when flying, he seems to lose all his colour and to dwindle to half his size.

[This singular circumstance, I suppose, is caused by the colours being all of a somewhat subdued tint, and being very equally dispersed over the whole surface of the wings, so that in the rapid motion of the wings in flight the colours are so blended together that they lose their distinctness. Of course, I only give this as a sup-

position, but I have so repeatedly noticed this fact in the flight of *Cardui*, that I cannot refrain from calling attention to it here.]

We determine, however, to await his return; and sure enough he soon reappears; and after rushing over the hedge and back again two or three times, actually settles boldly on a clover-head close to us, and, as if tired with his exertions, closes his wings and begins to extract the honey. It's his last meal, poor fellow! Sweep goes the net!—a flutter—a squeeze, and all is over with him. Calmly we walk on (at least with as much composure as we can muster under the attacks of those horrid *Diptera*!) We behold *Vanessa Io* and *Urtica* sitting in dozens on the clover flowers; but these species being lucky exceptions to our wants, we pass on without molesting them. *Plusia Gamma*, too, bustles about in the clover in the most consequential manner; indeed, he makes the most of his "little day," for, visit him when you will, by night or day, you will almost always find him feeding on the honey of clover or other flowers. We now reach the gate at the end of the clover-field, surmounting which, we enter a large ploughed field, bounded on the side farthest from the sea by a small hanging copse which covers a steep sandy cliff rising abruptly from the field. We immediately make for the edge of this copse, and, when arrived within a few yards of it, we become aware of the presence of *Hipparchia Hyperanthus*. We look higher up the cliff, and see that the bramble flowers are surrounded by numbers of them, so we accordingly set to

work, and, with a little trouble (owing to the nature of the ground), soon capture about a dozen. While engaged in this pleasing occupation, we observe a sudden flash of bright golden yellow float down from above like a living sun-beam, and rest abruptly on a flower close to us; one glance, and we recognize *Paphia*. For a moment we experience the feeling so truly remarked by Mr. Stainton as unnerving one for action; but we conquer it almost directly, and with one well-directed blow the beautiful creature is captured. It, too, is transferred from the net to our nearly-filled box; and somewhat tired we retire to the clover, and sit down to rest ourselves.—ROLAND TRIMMEN, 71, Guildford Street, Russell Square.

[To be continued.]

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### NEW BOOKS,

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**GLAUCUS; OR, THE WONDERS OF THE SHORE.** By CHARLES KINGSLEY, F.L.S., Author of 'Westward Ho!' 'Hypatia,' &c. Third Edition, corrected and enlarged; cloth, gilt edges; price 3s. 6d. Cambridge: Macmillan & Co.

"The sixth thousand" of 'Glaucus' is now advertised. Hence of the two previous editions five thousand are in circulation, with all their blunders about the Entomology of this country being exhausted. Those who possess those editions are requested to observe

that that assertion is *untrue*. Knowing this to be the case, and knowing that a confident erroneous statement must do injury, we wrote to Mr. Kingsley and pointed out his error. This is not a solitary instance of our going out of our way to point out to other people blunders they had committed: sometimes we get into scrapes thereby; but, never mind, we do our duty.

On this occasion "virtue had its own reward," for our imprudence in pointing out the error to a perfect stranger was not only taken kindly, but has led to a continued correspondence, a promise to correct the error in the next edition, and further it has led . . . . . but we had better not run away any further from our subject.

Instead of now reading that "Entomologists are spending their time in verifying a few obscure species," &c., we find that for "the entomologist much remains to be done;" but then, Mr. Kingsley perversely adds, "only at a heavy outlay of time, labour and study."

This is not true. We don't wish to be thought too *exigeant*, but certainly we are not content yet with page 23 of this third edition.

The entomological additions to the volume will be found at pages 154—160, and at 166—168: we would willingly extract the larger portion, but our space is unfortunately, like so many of the new Companies of the present day, "limited," so we content ourselves with the following brief quotation about the insect inhabitants of our streams.

"But perhaps the most interesting of all the tribes of Naiads are

the little 'water-cricket,' which may be found running under the pebbles, or burrowing in little galleries in the banks; and those 'caddises' which crawl on the bottom in the stiller water, enclosed, all save the head and legs, in a tube of sand or pebbles, shells or sticks, green or dead weeds, often arranged with quaint symmetry, or of very graceful shape. Their aspect in this state may be somewhat uninviting, but they compensate for their youthful ugliness by the strangeness of their transformations, and often by the delicate beauty of the perfect insects, as the 'caddises,' rising to the surface, become flying *Phryganæ* (caperers and sand-flies), generally of various shades of fawn-colour; and the water-cricket (though an unscientific eye may be able to discern but little difference in them in the 'larva,' or imperfect state) change into flies of the most various shapes, —one perhaps into the great sluggish olive 'Stone-fly' (*Perla bicaudata*); another into the delicate lemon-coloured 'Yellow Sally' (*Chrysoperla viridis*); another into the dark chocolate 'Alder' (*Siatis lutarea*); and the majority into duns and drakes (*Ephemera*); whose grace of form and delicacy of colour give them a right to rank among the most exquisite of God's creations, from the tiny 'Spinner' (*Baëtis*) of iridescent glass, with gorgeous rainbow-coloured eyes, to the great 'Green Drake' (*Ephemera vulgata*), known to all fishermen as the prince of trout-flies."

This and the passage that follows are aimed at inciting anglers to entomologize. Mr. Kingsley, himself an angler, holds that race in higher respect than we do.

## EXTRACTS.

### NOTES ON NOCTUÆ: FROM GUENÉE'S NOCTUELITES.

[Continued from p. 58.]

#### *Heliophobus.*

The larvæ of this fine genus live in the style of those of *Xylophasia*, but they are easily distinguished from them as well as from those of *Agrotis*. This genus is very natural, were it confined to the single *Popularis*; but when we attempt to introduce other species it becomes very heterogeneous. Not wishing to split up the genus *ad infinitum*, I have divided it into groups. The first group contains the type of the genus; its larva is perfectly known, and has many points of relation with those of certain *Luperinæ*, and, like them, feeds at the roots of grasses; it is particularly shining, thick, and is attenuated at the ends, and coils itself up immediately that it is disturbed. The perfect insect at first glance resembles a *Neuria*, which was long placed in the same genus; but it is the whitish nervures sharply expressed on a brown ground-colour which occasion this resemblance, which is only apparent. The female in the size of the abdomen surpasses all known European species. The male flies with vivacity at dusk, and one may easily procure considerable numbers by placing a light near a window looking into the country, at the close of summer.

The second group affords us a curious anomaly. The female, until recently unknown, has been



lately discovered by M. Dardouin, of Marseilles: it has the wings reduced to very short stumps, as in *Hybernia*; the thorax is much contracted, and the pterigodes and collar are only rudimentary; the palpi are much shorter than in the male, and the legs, almost smooth, have the claws hardly perceptible; the abdomen alone is well developed, (Vol. I., pp. 168, 169.)

[To be continued.]

#### NORTHERN ENTOMOLOGICAL SOCIETY.

October 4th, 1856. B. Cooke, Esq., President, in the Chair.

##### Election of Members.

Reverend H. H. Higgins and J. H. Langcake, Esq., were elected Members.

##### Honorary Members.

F. Bond, J. B. Hodgkinson, E. Brown, and J. Tinker, Esqrs., were elected Honorary Members.

##### Exhibitions.

Mr. Buxton exhibited a fine box of Tortrices and Tineæ; amongst them was a fine series of *Ænectra Pilleriana*; and also a box containing long series of *Agrotis Saucia*, *Agrotis Lunigera*, and *Hadena Lutulenta*.

The President exhibited a new "Fly," taken by J. Cooper in Perthshire, and read a description of it under the name *Æstrus biangulatus*, Cooke.

Mr. N. Cooke exhibited a box in which was his new *Noctua, Grammophora dipteroides*, Cooke; also an extensive series of *Tinea Merdella*, Zel., *Tinea nigrifoldella*,

Greg., and a specimen of *Phycita semirufa*, Haw.,—this had been returned from London as a new species.

Mr. Cooke exhibited, on behalf of Mr. Burchall, specimens of *Dosithea immutaria*, &c., taken in Ireland.

Mr. Greening exhibited a splendid series of *Eupithecia succenturiaria*, varying from the typical form of that species through the whole of the names *subfulvata*, *cognata*, *oxydata*, &c., which different authors have given to this hitherto little-understood species; some bred *Lamprosetia Verhuellella* and the pupa cases, and a quantity of *Ichneumon*s bred during the summer; also a fine series of *Eupithecia denotata* and *constrictata* taken in Wales.

Mr. Gorlick exhibited *Chrysoclista Schrankella*, taken near Manchester, and a new species of *Elachista* allied to *Kilmunella*.

Mr. Hague exhibited a box, in which there were *Eupithecia succenturiaria* and varieties, *Eupithecia denotaria*, *Dosithea eburnata* and *Acidalia degeneraria*, all taken near Conway.

Mr. Gregson exhibited the following insects, taken by Mr. Langcake near Conway:—*Emmelesia bifasciaria*, *Eupithecia expallidata* and *Eupithecia succenturiaria*, var. *cognata*.

The President then exhibited *Peronea potentillana*, Cooke, n.s., which feeds upon strawberry, and is allied to *comparana*, but distinct. He handed a box round, in which were *Peronea Shepherdana* and *Crambus Ericellus*, taken this season.

Mr. Gregson exhibited bred *Tinea nigrifoldella* (brought for

distribution amongst the members) and the original specimen of *Tinea pallescentella*, Sta., which he believes to be the same species as *Tinea merdella* of Zeller: he then showed his series of *Eupithecia succenturiaria* and its varieties; these and Mr. Greening's magnificent series removed all doubts as to the various forms before the meeting being one species: he then read a paper on the genus *Anthrocera*.

A vote of thanks being passed to the various friends and members who had contributed to the pleasure of the meeting, the remainder of the night was spent in examining the very great number of insects of all orders brought and sent for exhibition.—C. S. G.

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#### TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON.

In these have lately appeared two papers by Mr. Stainton, viz.: "*On the Spirit in which Scientific Books should be Read and Studied*," and "*How may the Onward Progress of the Study of Entomology be best furthered?*"

Mr. Stainton will be happy to forward a copy of either of these papers to any one enclosing two postage-stamps, or a copy of both for three postage-stamps.

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# THE SUBSTITUTE;

Or, Entomological Exchange Facilitator, and  
Entomologist's Fire-side Companion.

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No. 8.] SATURDAY, DECEMBER 13, 1856. [PRICE 2d.

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## POPULAR ENTOMOLOGY.

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At a meeting of the Manchester Mechanics' Institution, on the 18th November, Lord Palmerston, in the course of an address full of practical wisdom, made the following observations, and we think they are so good in themselves, and so applicable to our purpose—the diffusion of entomological information among the people—that we have resolved to bring them before our readers. “The first object of instruction ought to be that which we have been told is the meaning of education—to teach a man how to live—and to teach a man how to live, his attention ought first to be directed to that pursuit to which he means to devote himself through life: there indeed he should drink deeply, and there he should endeavour to perfect his knowledge; but should he on that account not endeavour to enlarge his mind, to extend his views, and obtain information on other matters not connected with the business of his profession? Then we may be

told that we will make him a mere smatterer in knowledge, to which I reply that it is better for a man to be a mere smatterer than to be ignorant and uninstructed. An ignorant man believes that his country is the only one in the world, that this planet is the only great portion of the Creation, that the sun is placed in the firmament merely to warm him, the moon to light him home, and the stars to amuse him on the journey; but when he is let into the secret of that vast universe, the contemplation of which fills the mind with awe, his views become more liberal and enlightened, his mind is raised above the grovelling ideas of life, and he finds himself a superior being to what he had been before.” Emphatically true are these sentiments; and we wish we could engrave them on the hearts of the great artizan class whose heads and hands have made this England what it is. Emphatically true of all knowledge, whether of worlds rolling in their orbits, or of insects basking in the sunbeam or floating in the evening's shade. The study of the

laws of Nature, as seen in one or other of the developments of typical forms, is open to all men, and in every development equally efficacious in its results upon the individual, the benefit being in proportion to the time and attention bestowed. Well is it that it is so; all tastes are not alike, and no man has the time to work up any of the great kingdoms of organic or inorganic matter. Every one must make his selection; and we would especially call attention to the insect race, as a world of wonders accessible to all, requiring no expensive apparatus, and no vast outlay in books, and on these accounts especially available for working men. Would that we could win some of the intellect daily exhibited by this class in their business, to the study of insect life in their leisure hours! Sure we are that even were the individuals never to become scientific entomologists, although they were eventually only "mere smatterers," they would be happier and better men. We are sure of this because we know that all men must and will have recreation, and that a change of employment, such as the study of insect life affords, would give them that recreation without the debasing consequences attending the means usually used to obtain it. Not that we would extol Entomology

as the renovator of the human race: no, we take it in conjunction with other science, art and literature, as a means for developing the faculties of men, showing what position and proportion insects bear in and to the whole creation, and thus help to extend mens perception of the scheme of Nature in which both insects and men play perhaps an equally important part. And it may be that an acquaintance with the wonders in insect life which human intelligence cannot comprehend, may suggest to these students how reasonable it is to believe that they themselves are problems that must wait for their solution until they attain a further development in another stage of existence.

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#### TO CORRESPONDENTS.

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*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON.*

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*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

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*Subscribers of Five Shillings, which amount may be sent in Postage-stamps to the Publisher. The Paper will always be ready on the Friday, and may be procured of KENT & Co., PATERNOSTER Row, as well as of the Publisher.*

*Several communications only wait for room.*

G. LEWIS.—Mr. Stainton is at home to any Lepidopterist, at 6 P.M., on the first Wednesday in every month.

E. HORTON.—Agreed. We will be more guarded in future. We do not pledge ourselves to accept the paper on the Sunday question, but we are open to read one.

ERRATUM.—Page 69, second column, line 27, for "*Atalanta*" read "*Urticæ*."

## DUPLICATES AND DESIDERATA.

*Lepidoptera for Exchange.*—I have abandoned all idea of making any future collecting excursions to Scotland, but perhaps the following list of my duplicates will prove interesting to many entomologists, and tend to stimulate collectors to future exertions in that part of the kingdom, seeing that all were captured in Perthshire, except *Psyche nigricans*, and a few other species whose locality is well known.

*Erebia blandina*,  
" *Cassiope*,  
*Lithosia muscerda*,  
*Nudaria senex*,

*Phragmatobia fuliginosa*,  
*Orgyia fascelina*,  
*Lasiocampa Callunæ*,  
(Palmer.) Zool. p. 1656,  
*Ptilophora plumigera*,  
*Clostera reclusa*,  
*Psyche nigricans*,  
" *opacella*,  
(Steph.) Mus. Cat. p. 310,  
*Fumea nitidella*,  
*Acronycta Myricæ*,  
(Guenée) Zool. p. 1439,  
*Diptera Orion*,  
*Stilbia anomala*,  
*Leucania pudorina*,  
" *littoralis*,  
*Nonagria neurica*,  
" *Cannæ*,  
*Luperina albicolon*,  
*Crymodes Templi*,  
*Xylophasia sublustris*,  
*Noctua Dahlii*,  
" *depuncta*,  
*Chersotis Haworthi*,  
*Spælotis cataleuca*,  
*Agrotis cursoria*,  
" *valligera*,  
*Heliophobus popularis*,  
*Orthosia neglecta*,  
*Xanthia ferruginea*,  
*Dianthæcia conspersa*,  
*Eremobia ochroleuca*,  
*Polia Chi*,  
*Hadenæ Æthiops*,  
" *adusta*,  
" *rectilinea*,  
" *Atriplicis*,  
" *glaucæ*,  
*Aplecta tincta*,  
" *occulta*,  
*Xylina rhizolitha*,  
" *petrificata*,  
" *semibrunnea*,  
*Calocampa vetusta*,  
" *exoleta*,  
*Cucullia Lychnitis*,  
*Aporophila australis*,  
*Cloantha Solidaginis*,

- Xylocampa lithorhiza*,  
*Anarta melanopa*,  
 „ *cordigera*,  
*Plusia interrogationis*,  
 „ *bractea*,  
*Psodos trepidaria*,  
*Speranza brunneata*,  
*Eupisteria carbonaria*,  
*Cleora cinctaria*,  
*Alcis subcærulearia*,  
*Boarmia Laricaria*,  
*Charissa obfuscata*,  
*Gnophos pullata*? (Wales)  
*Celma imbutata*,  
*Coremia Salicata*,  
*Electra Chenopodiata*,  
 „ *populata*,  
*Harpalyce Galiata*,  
 „ *albocrenata*, (Cur.)  
*Aplocera cæsiata*,  
 „ *flavicinctata*,  
 „ *ruberata*,  
*Thera Juniperata*,  
 „ *variata*,  
 „ *simulata*,  
 „ *firmania*,  
*Oporabia neglectata*, (Steph.)  
 „ *autumnaria*,  
 „ *filigrammaria*,  
*Lobophora polycommata*,  
 „ *lobulata*,  
*Eupithecia rufifasciata*,  
 „ *Callunaria*,  
 „ *castigata*,  
 „ *austerata*,  
 „ *sobrinata*,  
 „ *abbreviata*,  
 „ *subfasciata*,  
 „ *indigata*,  
*Eucestia Spartiata*,  
*Phibalapteryx lignata*,  
 „ *polygrammata*,  
*Plemyria lapidata*,  
*Emmelesia blandiata*,  
 „ *ericetata*,  
*Ptychopoda immutaria*,  
 Ent. Ann. p. 31  
*Dosithea eburnaria*, (Wocke)
- Acidalia holosericearia*,  
 „ *fumata*,  
*Asthena candidata*,  
*Hypena crassalis*,  
*Aglossa cuprealis*,  
*Pionea stramentalis*,  
*Scopula alpinalis*,  
*Pyrausta ostrinalis*,  
*Lozotania dumetana*,  
*Amphisa prodromana*,  
*Peronea hastiana*, (in great variety)  
 „ *rufana*, (in great variety)  
 „ *lipsiana*,  
*Cræsia Bergmanniana*,  
*Spilonota roborana*,  
 „ *rosæcolana*,  
 „ *amænana*,  
*Lithographia nisella*,  
 „ *cinerana*,  
*Anchylopera uncana*,  
 „ *unguicella*,  
*Pæcilochema piceana*,  
*Coccyx strobilella*,  
 „ *ustomaculana*,  
 „ *Vacciniana*,  
*Pamplusia monticolana*,  
*Ephippiphora coniferana*,  
 „ *fissana*, (Steph.)  
*Cnephasia Stephensiana*,  
 „ *octomaculana*,  
*Ablabia pratana*,  
*Euchromia fulvipunctana*,  
*Orthotania striana*,  
*Sericoris urticana*, (variety?)  
 „ *alternana*,  
 „ *cespitana*,  
*Eupæcilia ruficiliana*,  
*Crambus dumetellus*,  
 „ *pascuellus*,  
 „ *silvellus*,  
 „ *falsellus*,  
 „ *margaritellus*,  
 „ *contaminellus*,  
 „ *Warringtonellus*,  
*Eudorea atomalis*, (Doubl.)  
 „ *murana*,

*Eudorea lineola*,  
*Pempelia dilutella*,  
 „ *palumbella*,  
*Tinea fulvimetrella*,  
 „ *picarella*,  
 „ *ochraceella*,  
 „ *rusticella*,  
*Nemophora Schwarziella*,  
 „ *pilella*,  
*Prays Curtisellus*,  
 „ variety? (*rustica*)  
*Plutella Dalella*,  
*Depressaria ciniflonella*,  
 „ *costosa*,  
*Gelechia galbanella*,  
 „ *sequax*,  
*Acrolepia granitella*,  
*Lithocolletis Vacciniella*,  
 „ *Messaniella*,  
*Nepticula Weaveri*,  
 (Douglas).

(*Desiderata to follow.*)

—RICHARD WEAVER, 25, *Pershore Street, Birmingham*; November 14, 1856.

*Cheimatobia brumaria*.—I have many duplicates of *Cheimatobia brumaria*, a species everywhere common I believe; but as the females are not easily found, being apterous, and I having many, they perhaps may be useful to some. You must not send boxes on application for them, but send lists first. — E. S. NORCOMBE, *Heavitree*; November 24, 1856.

*Lepidoptera*. — I have some spare duplicates of

*Polyommatus Corydon*,  
*Biston Betularia*,  
*Orgyia Pudibunda*,

if any of your readers are in want of them.—WILLIAM GREGORY, 24, *Clandon Street, near South Street, Walworth*; November 24, 1856.

## CAPTURES.

*Smerinthus Tiliae*, *Biston hirtarius*, &c.—I have been pupa-digging the last few days in this neighbourhood, and have taken nearly two dozen of *Smerinthus Tiliae* under elms and lime-trees; also *Biston hirtarius*, and a large number of other species, of which I do not know the names.—R. KING, 30, *Chalcot Villas, Adelaide Road, Haverstock Hill*; November 18, 1856.

*Lepidoptera*.—On the 19th October I took from off the trunk of a Scotch fir, in Wigmore Wood, a fine specimen of *Xylina Rhizolitha*: on the same evening I captured two good specimens of *Miselia Oxyacanthæ*; and on the next evening two others, in good condition, hovering over the white-thorn, in Hambley Wood. On the 2nd November I obtained two more good specimens of *Xylina Rhizolitha* from off the trunks of Scotch firs, on the border of Hambley Wood. On November 23rd I captured a good female specimen of *Ptilophora Plumigera*, in a lane leading from Lutton to the Great Cowbeck Woods. —W. CHANEY, 20, *Upper Britton Street, New Brompton, near Chatham, Kent*; November 23, 1856.

## COMMUNICATIONS.

*To Preserve Dragon-flies*.—The following method of preserving that very beautiful, but much neglected, section of insects—the Dragon-flies—I have found to succeed very well, more particu-

larly with the larger kinds. Having killed the insect with oxalic acid it is *immediately* to be cut open on the under side with a small pair of scissors, and the contents carefully taken out: next take a piece of soft cotton and draw it through the whole length of the body, repeating this with fresh cotton as long as any moisture remains. As most of the colours are inside, care must be taken not to use too much pressure in this part of the operation, or else the manipulator will have the misfortune to find that he has destroyed that which he was endeavouring to preserve. As to the thorax cotton must be repeatedly pressed into it until the moisture is entirely taken up. The abdomen and thorax are then to be half filled with magnesia or French chalk, and the remaining space filled with cotton (lamp cotton answers very well for this purpose); it is then to be slightly tied round to keep it in proper form, and the wings, &c., set with braces in the usual manner, and to be kept in a dry place. By adopting the above plan the various species of *Æschna*, *Libellula*, &c., have almost all kept their colours unchanged; the brilliant yellow of *Cordulegaster annulatus* seems as bright as when the insect was alive.—W. GROVES, 12, Morden Place, Lewis-ham Road.

*Lasiocampa Quercus*.—As no one has replied in the last Number of 'The Substitute' to Mr. Barrett's difficulties, on page 40 of a previous Number, would you be so good as to insert the following observations for his benefit. As observed in Argyllshire, *Lasio-*

*campa Quercus* lives two years, commencing its existence about the first of July in the ovum state. The larvæ emerge from the shells in twenty-four days, and by the end of autumn are fully one inch long. They thus pass their *first* winter in the larva state, resting I believe on the heather. They become full-grown larvæ in August of the next year, and spin their egg-like cocoons, in which they pass their *second* winter as pupæ. The imago appears in the following year from the middle of June to the middle of July. Eggs of *Lasiocampa Quercus* laid on July 6th were hatched on July 30th. If Mr. Barrett had caught his larvæ young enough he would have found that they had no inclination to spin up on the approach of winter. The cocoons of *Lasiocampa Quercus* are generally found on heaths close to the ground, while those of *Saturnia Carpini* are fastened high up on the heather. Our other two species of *Lasiocampa* live only half the time of *L. Quercus*, passing the winter as larvæ. *L. Trifolii* I have not seen in Scotland, though the other two species are abundant in this district. I am not aware that any of the British *Bombycina*, excepting *Cosmus ligniperda* and *Lasiocampa Quercus*, enjoy an existence of longer duration than one year. Any information on this subject illustrating the life-history of any long-lived species is very desirable. — T. CHAPMAN, Glasgow; November 24, 1856.

*Oiketicus Kirbyi*.—A good engraving of this insect will be found in the volume upon 'Foreign Moths,' in the Natu-



ralist's library. It well illustrates the notice by I. I. in one of your Numbers.—ID.

*Lasiocampa Quercus*.—I beg to state that I bred and reared above fifty specimens of *Lasiocampa Quercus* last year. The eggs were laid August 13, 1855. The larvæ hatched Sept. 5. They fed slightly through the winter, appearing to exist in a state of torpor; changed to pupa (first) June 23, 1856, and to imago August 1, 1856. I send up this note from my Diary in reply to a statement of Mr. Barrett's in No. 4 of 'The Substitute,' to the effect that all the larvæ of *L. Quercus* which he had ever possessed, "spun up in the autumn, and passed the winter as pupæ." I may also mention that some of my pupæ are still undeveloped, and are now passing their winter in cocoon-box.—C. R. LIGHTON, *Ellastone, Ashborne*; November 29, 1856.

*Types of the Genera of Coleoptera—a hint to dealers*.—I have collected some two or three hundred species of Coleoptera, and now am sadly confused about their nomenclature, having no one to help me, but few books, and little opportunity for getting away from a spot to which parochial duties tie me. Would it not be worth suggesting to some of the London dealers, or needy entomologists, to prepare a few series of typical specimens of genera for sale? I think there would be a great demand for them, and that they would materially tend to increase the number of British Coleopterists, and therefore eventually of British Coleoptera.—H. A. S.

*Gastropacha Ilicifolia*. — I

should feel obliged by your inserting the following in due course. Having friends residing in the neighbourhoods of Dartmoor and Exmoor, where the Whortleberry abounds, I should feel obliged to any entomologist who will forward me a coloured drawing of the caterpillar of *Gastropacha Ilicifolia*, as I intend to copy it and to distribute the copies amongst the fruit-gatherers in the above localities, in the hope of alighting upon this species; and if I succeed in procuring any will forward a pair of specimens to the sender thereof. I think if those who reside where the plant abounds were to show a drawing of the larva to the gatherers of the fruit, we should soon have specimens in every collection.—E. S. NORCOMBE, *Heavitree*; November 24, 1856.

*The Packing of Specimens to Correspondents*.—It is very trying to one after perusing a letter from a correspondent and reading therein the following:—"The insects arrived safe—quite safe—not an antenna injured, for which I am much obliged, and have returned the box containing so and so, which I hope will arrive safe," when at the same time the sender never used the means that they should arrive safely, if they are stuck—large, lumpy, egg-full bodies of *Bombyces* (without a single cross pin to prevent the rumbling thereof if they should get loose)—with *Geometrae* and *Tortrices*, and when you open the cover loose pins and lots of dust are all that remain of specimens you would have given anything to have had perfect. I do not believe in hope, but in action. Take

a little trouble in the packing, and insects must arrive safe at their destination. But there may be many who do not know how to pack them properly: let them pay attention to the following. Be sure to stick the pin on which the insect is firmly into the cork; never stick a small pin into a hole made by a larger one. Cross-pin the abdomens of all moths, both small and large, taking the same precautions as with the insect pin. For *Noctuæ* and *Bombyces* a strip of paper placed over the abdomen and secured with pins at the side is the best plan. If there is but a little of the pin projects under the thorax, hardly sufficient to stick in the cork, don't send it, but keep it yourself, and put another in its place. If the moth is set rather high up on the pin, and there is not depth of cork to take all there-of until the body touches the cork, place a pellet of cotton-wool under it, then strap over the same as above. If a body is loose take it off, wrap it in cotton wool and secure the cotton wool with pins. If these directions are followed you need not *hope* for the safe arrival of the contents of any box; you may be sure of it.—ID.

*Acherontia Atropos*.—Mr. Stainton and other writers assign a very short period for the final transformation of the *Acherontia*. Now this insect being of a very respectable size and tangible, I happen to have made an acquaintance with it, to clear up a puzzle that runs through so many species of moths, as to their continuance and reproduction. I am told in the 'Manual' and elsewhere that the moth appears from August to October, doubtless on good grounds; but how comes it, if this is *all* the truth,

that the female can chance *in autumn* upon a depository for eggs, that may or may not be planted with the insect's food (say potatoes) till the following spring? In September I procured, from near Mountsfield, two fine full-fed larvæ, who retired into the earth, and there they are now. Somewhat later I provided myself with two pupæ, and made them as comfortable as circumstances permitted: they despised, by the way, my arrangements, and persist in lying, like the pigs in the old song, and are *at this moment* visibly strong and active, resisting all attempts to make them lie more decent: the self-buried pair take things more quietly. All this, you see, is at variance with "VIII—X" of the 'Manual;' something more is wanting: and I just throw out a suggestion that you should consider and report upon this at some fitting opportunity. Probably all this is no news to you; but, for the sake of a little variety in "Insect Books," it is worth notice; otherwise it makes us, the uninitiated, imagine that Sterne's complaint, that we make new books as apothecaries make new mixtures, by pouring out of one phial into another, is as much the practice now as in his time. For my own satisfaction I may probably try a generation or two of the Death's Head. — W. R. MORRIS, *Kent Water Works, Mill Lane, Deptford*; November 27, 1856.

*Notes by an Old Collector*.—Neither to the scientific entomologist nor even "old collectors" do I presume to deliver a statement of my own experience in capturing larvæ; but doubtless there are hundreds of incipients in Entomology, and I wish to draw their attention

to the rearing of larvæ. The pursuit and capture of a moth, its preservation, and the ascertaining of its species, from their peculiar attraction, will always have numerous votaries; but mere moth collectors know not of the *charm* there is in rearing a caterpillar, in noticing its food and manner of eating, day by day observing its changes and its disposition, which is as variable as in the genus *Homo*, and in watching its mode of spinning its web, and its progress towards transition: the rapturous anxiety to distinguish the insect when emerged produces reflection that does not subside with the day. In May and June I have done best along hedgerows: the thorn abounds with *Geometrina* larvæ, most of which require but little feeding; they soon go up and soon come out. In July I prefer the oak-woods. August is a grand month for that glorious larva-feeding tree, the alder; the best *Geometrina* larvæ I ever captured were from alders growing in boggy ground. Wild, uncultivated, barren districts, mosses and the vicinage of a river, are excellent situations for good insects: from almost every tree growing in such localities larvæ may be expected. The end of August, the whole of September, and the first half of October, is the larva-collector's real harvest. For many years during this period was I knee-deep in dew at five o'clock, and from two or three hours after, on each dry morning, beating the trees, shrubs and hedges. Early in the morning is a better time for capturing larvæ than during the day: one instance I will adduce, which will make the reason apparent: I beat a low-growing poplar during the day unsuccessfully;

passing the same tree at an early hour next morning I saw a *Smerinthus Populi* feeding; on taking it off I discovered a *Notodonta ziczac* full-grown. Now where were the two caterpillars the day before? They certainly were not out feeding. The willows growing in hedges are good bushes for larvæ. Going along a lane diverging from the Warwick Road to the river Eden, about three miles from Carlisle, I captured seventeen *Ceruræ* from the willows growing in the lane and adjoining fields, all *furcula*. I have only bred three species of *Cerura*, viz., *vinula*, *furcula*, and what was formerly called *latifascia*. In a field in the neighbourhood of Houghton Moss I came to some low bushes, two or three feet high, of a willow growing near the hedge ditch, and about twenty or thirty yards apart; from these I captured thirteen larvæ of *Clostera reclusa*. On the confines of Scaleby Moss I obtained *C. curtula* off the willow: these are the only species of *Clostera* that have come under my notice. There is one species of willow growing in hedges, which has a dark green, shiny leaf, that I have beat in vain: I could never detect animal life on this bush. There is more intelligence in a caterpillar than many people are aware of. In a former 'Note' I recorded an anecdote of a patriotic caterpillar, *Leiocampa*, of a sturdy old English disposition, preferring death to captivity: I also registered an anecdote of a viciously disposed caterpillar, whose malevolence was equal to anything we have heard of since Cain's time,—the genus of this caterpillar I cannot positively affirm, as I lost the fratricide—the *fact* remains the same.

I will now add an anecdote of a persevering and determined caterpillar, whose steadiness of purpose only ended with its life. On the trunk of a chestnut tree in Dulwich I took a caterpillar of what I supposed was *Apatela Aceris*, and placed it in my breeding-box: on raising the lid, a day or two after, it was spinning its web in the chink between the lid and the box; I broke the web, and the larva dropped to the bottom: the next day, as if to spite me, it was weaving again in the chink, and, as a matter of course, in lifting the lid I again broke the web, and down it fell: notwithstanding these two interruptions, the day following it was in the chink again, pertinaciously pursuing its avocation; the like result occurred from the same cause, this time with a fatal issue, for on looking into my box on the day succeeding I found it dead where it fell, and denuded of hair; this denudation elucidated a subject on which my thoughts had previously meditated, and demonstrated that caterpillars are endowed with reason and not merely instinct. When it first fell from its building, by the props being removed, I observed that it had less hair on than when captured; on the second fall it was perceptible that the hair had further diminished, and at last, when found dead, it was bare. This clearly shows that as it was building its home it was gradually undergoing a process towards transformation, had it not been disturbed in its operation of home erection: when the bed was made it would have been a vital naked caterpillar ready for sleep. I have before informed you of a shallow, unreflecting caterpillar,

*Lasiocampa*, wayward and wilful withall, but by a little nursing and coaxing it was induced to believe it was spring when only October, and was thus tricked out of some months of its time. We have an example in the *Cossus* of an easy, free-going temperament, adapting itself to circumstances, and as homely and comfortable in his tin case and sawdust as in the heart of his favourite oak.—RICHARD CARTMEL, 13, *Williams Grove, High Park, Walworth*; November 24, 1856.

*Cornish Insects*.—I should be obliged if you would inform my numerous correspondents in the next 'Substitute,' that I have no duplicates of the insects taken in Cornwall. —REV. E. HORTON, *Wick, Worcester*; Dec. 2, 1856.

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#### EXTRACTS.

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#### KIRBY AND SPENCE'S 'INTRODUCTION TO ENTOMOLOGY.'

"If anything more than a fleeting renown could be acquired by a well-written book on a scientific subject, Kirby and Spence might gain, by their 'Introduction to Entomology,' that sort of immortality which men of letters desire. It is written in a clear expressive style, with a precision which authors less practically acquainted with the subject could not attain, and gives the result of long experience, continued research, and extensive reading, upon many interesting subjects connected with the lives of insects. It takes a minute as well as a general view of the circumstances under which they are produced, and the conditions under which they

live, and contains many interesting illustrations of the presiding influence and care of God over all his works. The comprehensive intelligence with which the subject is treated, the accuracy of the details, and the learned research in which the authors sometimes indulge themselves, will give to this work a long and honourable existence in the literature of science, but, like all other writings of the same class, its days are numbered; and the time will come when it will cease to be regarded as a popular exposition, and the relic of its honour will be frequent quotation by the antiquaries of science.

"This is, we admit, a gloomy view of the authorship of scientific men, and may act as a discouragement to those who write for posthumous fame. But it is certainly true that a man of science cannot reasonably anticipate lasting reputation for a summary of the scientific knowledge of his age, however carefully and ingeniously executed. The renown obtained by the laborious composition of scientific works is, of all others, the most evanescent.

"The cause of this rapid decay in the popularity of scientific books is evident. They are the records of facts, which, by the increase of knowledge, are presented in unanticipated aspects and relations. The discovery of new truths, the correction of old errors, and the more perfect application of established principles, make that defective to-day which was yesterday the representation of existing knowledge. No grace of style, no profundity of thought, can compensate in an elementary treatise for the omission of recent dis-

coveries, or for a narrow and imperfect view of the Science, much less for an erroneous representation of the philosophy of the subject. But, although we cannot peruse the masterly productions of our age without a sigh, conscious of their almost ephemeral reputation, we are, like their authors, cheered by the recollection that the principal object of their publication is always attained, and that when they cease to be longer useful to mankind, it is from the growth of the knowledge which they have imparted, and the higher development of the human intellect. Few books on a neglected subject have been more successful than the 'Introduction to Entomology,' and none have better deserved the reputation obtained. Nor is its mission yet complete. For many years to come it will be read with interest and quoted as an authority; and when its old age is at hand, and it gives place to another favourite, the names of its authors will be remembered with honour, and their labours be recited as a motive for the pursuit of the Science they greatly advanced."—*Eclectic Review*.

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*On the 20th inst.,*

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John Van Voorst, 1, Paternoster Row.

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**DUPLICATE COLEOPTERA FOR SALE.** — I have duplicates of the following:

- Cicindela maritima, 6d.
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- Zool. p. 4906
- Phyllopertha suturalis, 1s. 6d.
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- Aphodius Laponum, 6d.
- (Schön.) Zool. p. 3718
- Cetonia obscura, 6d.
- Murray Cat. p. 51

Sericosomus fugax, 6d.

    "    brunneus, 1s.

Elater sanguineus, 6d.

    "    pomona, 4s.

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    (Fab.) Zool. p. 4234

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    (Steph.) Zool. p. 2961

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    Ent. Annual, 1856, p. 86

Pissodes Pini, 3d.

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    (Payk.) Zool. p. 3718

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    (Lin.) Zool. p. 3718

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    Zool. p. 3309

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The price affixed is to each specimen.

\* Denotes that the specimens are not quite first-rate.

RICHARD WEAVER,  
25, Pershore Street, Birmingham.

Printed and published by EDWARD NEWMAN, Printer, of No. 9, Devonshire Street, Bishopsgate Without, London, in the county of Middlesex.—Saturday, December 13, 1856.

# THE SUBSTITUTE;

Or, Entomological Exchange Facilitator, and  
Entomologist's Fire-side Companion.

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No. 9.] SATURDAY, DECEMBER 20, 1856. [PRICE 2d.

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## STRUCTURE AND HABIT.

—  
IN the extracts from Guenée's 'Noctuélites,' given at page 32, the following sentence occurs. "The larvæ of the second series, or *Nonagridæ*, have particular manners, which necessitate modifications in their organisation." This may be a slip of the pen—we hope it is—but the idea conveyed is so erroneous that we think it right to offer thereon a few remarks. Modifications from what? What were the *Nonagridæ* before they were modified? and what modified them? Their manners? No: circumstances never modify organisation in this way; and if the habitat be changed a new organisation must be provided. Nature never plays second to circumstance; but the various circumstances occurring in and concerning the existence of her myriads of living creatures all form part of her one great plan, and are foreseen and provided for accordingly; and thus organisation is fitted for the predetermined conditions in which animals have to live.

Among insects climate and situation unquestionably exercise considerable influence upon form, size and colour; but this influence is limited within such bounds that it is very rarely the type of the insects so affected cannot be referred to. Some species have great power of endurance, but it is only within a certain range of circumstances: introduce another element and they perish. Indeed, the idea of species, so to speak, appears to be dependent upon a previous creation of circumstances which required that every kind of organised being should occupy only a limited sphere of action, each sphere, though varying in extent, being apportioned to that one kind which we call "a species." It has been remarked that countries and districts subject to similar climatic conditions, although thousands of miles apart, possess a similar insect Fauna, formed as it were upon the same type. This might be deemed to be a modification of form by circumstance, but we, on the other hand, hold that it is only an introduction of similar forms to similar

circumstances,—the result of the action of those fixed and unalterable powers which we call laws of Nature.

We believe then that habit must depend upon structure, and that we have no proof that structure is ever so far modified by habit as to adapt an insect to conditions totally at variance with the ordinary circumstances of its existence. If it were so, creation would soon become a chaos, and law and order be extinct. Powers may be diminished, not added. Difference of situation is supplied by Nature by difference of species, and not by modification of existing ones; and so, "particular manners" can never "necessitate modifications in their organisation."

#### TO CORRESPONDENTS.

*All communications to be authenticated by the name of the writer, and to be addressed To the EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON.*

*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

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*Several communications only wait for room.*

G. F. M.—The 'Manual' will make two volumes. Vol. I. will conclude with the *Noctuæ*.

The 'Intelligencer' is announced to appear again on the 4th of April next.

#### DUPLICATES AND DESIDERATA.

R. Weaver's Desiderata: useful specimens. (Steph. Mus. Cat.)

Colias Hyale,  
Thecla Betulæ,  
" W-Alburn,  
Polyommatus Arion,  
Apatura Iris,  
Trochilium Vespiforme,  
" Allantiforme,  
" Culiciforme,  
Stauropus Fagi,  
Notodonta tritophus,  
Lophopteryx cucullina,  
Drymonia Dodonea,  
Clisiocampa Castrensis,  
Eulepia cribrum,  
Lithosia aureola,  
" helvola,  
Cybosis mesomella,  
Triphæna subsequa,  
Lytæa agathina,  
Chæræa cespitis,  
Agrotis lunigera,  
" obelisca,



*Agrotis cinerea*,  
*Spælotis pyrophila*,  
*Graphiphora ditrapezium*,  
*Dasycampa rubiginea*,  
*Apamea ophiogramma*,  
*Hama sordida*,  
     " *furva*,  
*Crymodes Templi*,  
*Heliophobus hispidus*,  
*Polia dysodea*,  
     " *flavicincta*,  
*Acronycta Alni*,  
     " *strigosa*,  
     " *auricoma*,  
     " *Salicis*,  
*Ceratopacha fluctuosa*,  
     " *ocularis*,  
*Ipimorpha retusa*,  
*Senta flammea*,  
*Nonagria Hellmanni*,  
     " *extrema*,  
*Cucullia Gnaphalii*,  
     " *Chamomillæ*,  
*Heliethis peltigera*,  
     " *scutosa*,  
*Acontia luctuosa*,  
*Emmelia sulphuralis*,  
*Brephos Parthenias*,  
*Odoptera fuscantaria*,  
     " *lunaria*,  
     " *illustraria*,  
*Euchloris smaragdaria*,  
*Cleora glabraria*,  
*Alcis consortaria*,  
*Cabera rotundaria*,  
*Aleucis pictaria*,  
*Aspilates citraria*,  
*Coremia Ligustrata*,  
*Electra sagittata*,  
*Anticlea Berberata*,  
     " *rubidata*,  
*Lobophora sexalisata*,  
*Eupithecia togata*,  
*Shidax sparsaria*,  
*Plemyria gemmata*,  
*Philemene Rhamnata*,  
*Cosmorhoë rusticata*,  
*Emmiltis rubricata*,

*Acidalia marginepunctata*,  
     " *subsericeata*,  
     " *degeneraria*,  
*Timandra emutaria*,  
*Macaria alternata*,  
*Colobochyla Salicis*,  
*Pyrallis glaucinalis*,  
*Dolycharthria punctalis*,  
*Botys lancealis*,  
*Sitochroa palealis*,  
*Spilodes sticticalis*.

*Lozotænia dumetana*,  
     " *Branderiana*,  
*Ænecra Pilleriana*,  
*Peronea umbrana*,  
*Spilonota pauperana*,  
*Anchylopera Upupana*,  
     " *Mitterbacheriana*,  
*Halonota turbidana*,  
     " *populana*,  
     " *obscurana*,  
*Coccyx nanana*,  
*Opadia funebrana*,  
*Ephippiphora puncticostana*,  
     " *Germanana*,  
     " *Trauniana*,  
*Grapholita expallidana*,  
*Cnephasia Penziana*,  
*Eupœcilia Carduana*,  
     " *ambiguella*,  
     " *notulana*.

#### Crambus Cerussellus.

I much approve of the plan of sending a communication before sending any insects and box.—R. WEAVER.

*Lepidoptera*.—I have duplicates of

*Grapta C-Album*,  
*Nemeobius Lucina*,  
*Arge Galathea*,  
*Trochilium Cynipiforme*,  
*Larentia cervinata*,

which I shall be happy to exchange for any of the following:

Aporia Cratægi,  
 Leucophasia Sinapis,  
 Erebia Blandina,  
 Polyommatus Ægon,  
 " Agestis,  
 Callimorpha dominula,  
 Arctia villica,  
 Euthemonia russula.

—J. JESSOP, JUNR., *Church Street, Rawmarsh, near Rotherham.*

### CAPTURES.

"A Rare Old Plant is the Ivy Green."—As 'The Substitute' is a "Fireside Companion," by antithesis an account of "doings in the frost" may prove not altogether uninteresting. Dinner and a final glass of port having been discussed, I received sufficient moral courage to say to my brother, "Suppose we take a lantern and visit the ivy which we saw in bloom to-day." This remark was of course caught by the quick ears of the ladies, and elicited divers doubts expressed on their part as to our sanity, including belief in a sufficient stock of that quality in the moths to prevent their exposing themselves to such inclement weather. However, we sallied forth, not without inward qualms and outward wrappers. The ivy reached, a lantern was held to throw a little light on the affair, and my brother cried "I see a moth,—one, two, three." "Where? catch it then." But the wind blew and out went the light, and after it every match struck to renew it. Two "vesuvians" (the initiated will understand) in succession raised a flame, and we began our

search anew. The moths seen at first were *S. satellitia*, of which we took thirty-five; we also took *C. Vaccinii*, *O. lota*, *A. pistacina* and *Xanthia ferruginea*: this was our first night, and was rich in promise. Noisy was our greeting on return, for we affected no success; only after a little of the renowned non-inebriating cup, we requested a loan of some steam from the tea-urn to kill our specimens, the sight of which so turned the tables in our favour that we have been ever since allowed to depart unmolested, save by a casual and harmless grin. The second night I discerned a long crumpled article motionless under an ivy flower. G. pronounced the said article to be *C. exoleta*, and recommended its speedy capture: gingerly did we set about it, for the place was difficult; how to get him into the net was a puzzle, till in despair I proposed knocking him in; the blow was struck, and the moth rolled an inert mass to the depths of his gauzy prison; neither pinching nor pinning disturbed his equanimity, and we naturally supposed him stunned, but finding the event recurrent we concluded that, having taken no pledge, ivy-intoxication was allowed among *Noctue* at Christmas. Henceforth we carried a small baton to tap them gently into the net. On this night, and a few following, we took fifteen *C. exoleta*, eight *X. semibrunnea*, some *X. Lambda*, and, "spes ultima gregis," *D. rubiginea*; once with a rustle and a plunge a downy monster—*Atropos* at least—plumped into my net; pinch him; he squeaks—claws and feathers—by all that's Lepidopterous it is

*Troglodytes vulgaris*! We took 160 *Satellitina*, and of course have plenty to spare for anybody who may desire to roast their toes by the fire instead of chilling their fingers on the ivy. Sugaring in the same locality proved an utter failure, and pupa-digging scarcely less so, though the most productive last winter. I may mention, in conclusion, that *Ch. dispar* was taken here last summer, and is in my possession; as also two *S. Convoluti* taken this autumn, *Edusa*, *Corydon*, *Adonis*, *Alsus*, *Argiolus*, *Agestis*, *Camilla*, *Machaon*, and others which I forget, have also been recent prizes; but as they have not much connexion with frosty evenings I conclude.—W. V. CROUCH, 2, Albert Buildings, Weston-super-Mare.

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#### COMMUNICATIONS.

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##### *On Duplicates and Desiderata.*

—In the first number of 'The Substitute' are some remarks by (judging from the style) Mr. Stainton, from which I make the following extract: "Almost every collector has, during the summer, taken specimens of insects which he does not require for his collection, and which he would be glad to give away to any one that wanted them." Every one knows Mr. S.'s own generosity and liberality in this respect, which are indeed deserving of all praise. But I cannot, for my part, subscribe to the opinion that most, or even many, entomologists, exhibit a similar readiness to supply the wants of their brethren: on the contrary, I would say, "Apparent

*rari nantes, in gurgite vasto.*" Mr. S. considers that this spirit *ought* to prevail—that *no* return should be expected—that, in a word, whatever is sent should be sent as a free *gift*. At page 55 of the same work, Mr. Norcombe remarks: "this appears to me perfectly absurd." If, by this, Mr. N. means that it is perfectly absurd to expect that collectors *will* do so, I must confess that I entirely agree with him. But Mr. N. objects to the soundness of this doctrine in theory as well as in practice: "Having all I want for myself of a certain species, why, he asks, should I go many miles for more unless in the expectation of getting others I have not in exchange for them: am I to get boxes, then work hard to get insects to put into them, pay postage, and expect nothing but a 'beggarly array of empty boxes?'" He might have added—the trouble, which is not trifling, of setting them. This appears to me a fair line of argument. The proper spirit, according to Mr. N. is, "to send as many, and as little injured (how I wish some of my correspondents would take the hint!) specimens as you can to your correspondent, expecting he will do the same," &c. *In the main* I concur in this view. Once more, at page 78, we have an indignant letter from "A Sufferer," who, after complaining that his letters requesting the *gift* of certain insects remained unanswered, adds: "Now, Mr. Editor, this state of things will never do; it is a disgrace to the entomologists of Great Britain," &c. This is strong, nay, I think unjustifiable and unwarrantable language.

Surely "Sufferer" does not think that he has a *right* to another man's insects. But he complains that persons who do not intend to "give away," yet take to themselves the public credit of doing so. This is an unpleasant charge. I have carefully looked over the pages of "The Substitute," and, with one exception, I observe no offer of insects unless accompanied with a more or less direct intimation that a return is expected. The one exception alluded to is that of Mr. Norcombe (page 27), who subsequently, as we have seen, stated his views on the subject. When *charges* are made, or *complaints* preferred, the *name* of the complainant should unquestionably be given. I confess the style of "Sufferer's" letter would not be calculated to give a spur to *my* liberality. I will now state my views on this knotty question. *Abstractedly*, perhaps, Mr. Stainton is right; but the honourable and unselfish feelings, which alone could prompt a man to act as he recommends, are not common, and for *practical* purposes we must judge of people, not as they ought to be, but as they are. To my offer of certain uncommon insects, which I am in the habit of taking as pupæ in tolerable plenty, I received many replies. Some of my correspondents having enquired what return I expected, I replied "none,"—my offer being principally addressed to beginners, who probably, if willing, would yet be unable to assist me. This is a "*bonâ fide*" offer, and, if spared, I shall cheerfully send to as many of my correspondents as I can specimens of the insects named, stipulating

only that the postage be paid. But lest I should appear to claim more credit than I deserve, I freely confess that *generally* when I send good insects I expect, and I think I am *entitled* to expect, a return. In support of this view, in addition to Mr. Norcombe's, I give the following reasons:—I do not *buy* insects—it is far too great an expenditure of time and money for most entomologists to visit in person the various localities where many insects are *exclusively* found, *e. g., Actæon, Muscerda; &c., &c.* How then am I to obtain them except by exchange? Again: I receive a box of rubbish, and on opening it find the mites playfully skipping about—such bodies as are left saturated with grease—moths venerable from age, rubbed, scrubbed, tattered and torn. The letter which accompanies this desirable acquisition requests that the box may be returned by next post with bred specimens of *Dodonæa* and *Xerampelina*. Am I not justified in replying that I require a better return for such insects? Every entomologist of two or three years' experience knows that such correspondents are like anything but "angel's visits, few and far between." Much more might be said, but I will content myself, at this time, with remarking, 1st,—That I am always ready to assist (if in my power), without stipulating any return, *bonâ fide* beginners, when gentlemen, *i. e.,* gentlemen in their conduct and dealings. 2ndly,—If I send good insects to collectors of my own standing, I *do* expect a return. 3rdly,—If I find a correspondent trying to get the "weather-guage" of me, in self-defence I must make

a bargain, or decline the honour of his correspondence. I wish this latter class numbered fewer followers. As honourable exceptions I mention, of my own knowledge, Mr. Stainton in the "Micro's," and Mr. H. Doubleday in the "Macro's;" the liberality (using that word in its most extended sense) shown to me by the latter gentleman, when I was a beginner, I shall not soon forget. As an illustration of my views I append the names of twelve species, *good* specimens, of which I much want. If any of your readers be able and willing to send all, or any of them, let him say so, adding his own wants. If I can supply them, I will do so; if I can *not*, I will honestly tell him so, and there the matter rests.

S. Bombyliformis,  
E. Cribrum,  
C. Castrensis,  
Z. Æsculi,  
P. Cassinea, females,  
N. Dictæoides,  
A. Auricoma,  
N. Helmanni,  
L. Obsoleta,  
T. Subsequa,  
H. Hispida, and  
C. Sponsa.

These twelve are selected from other wants merely, I repeat, as an illustration of what I deem a fair system of that much-abused word—exchange!—REV. JOSEPH GREENE, *Playford, Ipswich*.

*Lists of Coleoptera*.—Will you be kind enough to tell me, through the columns of 'The Substitute,' where I can purchase a List of British *Coleoptera*, as I am in need of such a list to label the specimens in my cabinet?—FRE-

DERICK FOX, *Coddenharn, Needham Market; November 27, 1856*.

[There is no such list to be had, except that of Messrs. Dawson and Clark, which only goes as far as the end of the water-beetles.]

*The Cabinet Question*.—Seeing in your leader of last week that cheap cabinets are desiderata, some of your readers may be glad to hear how I supplied myself. I have had two made of well-seasoned pine; one has 20 drawers 20 inches by 12 and 2 deep, and the other has 22 drawers 1 foot square, also 2 inches deep; each drawer has a fillet of wood fixed round the inside to rest the glass upon: both cabinets have doors. My maker charges for the first £2 15s.; for the second £2. The cork I buy of John Bussey, cork manufacturer, 106, Blackman Street, Southwark, at 4s. for 24 pieces, each piece about 3 inches by 10, and  $\frac{1}{4}$  thick. The glass I use costs me 3d. per foot, and answers the purpose very well. If this communication prove of use to any of your subscribers, I shall feel most happy to give further information.—ROBERT B. WERE, 35, *Osborne Terrace, Clapham Road, Kennington; November 1, 1856*.

*The Cabinet Question*.—After reading the article in the 'Substitute,' I spoke to the maker of my cabinet on the subject, and find he will be glad to make cabinets at a low price. I will give a description of mine: it is built of mahogany, French polished, opens with two doors, fastened with lock and key, containing 20 drawers 13 inches by 18 and  $1\frac{1}{4}$  deep, made of deal, with mahogany

fronts French polished; they are glazed with good flat glass, and nicely corked and papered. The whole cost was about £8. If any person wishing for a cabinet will send me the order, I shall be happy to forward it, or to answer any questions on the subject.—J. E. HALL, *Hassocks Gate, Hurstpoint, Sussex.*

*Rounded Setting-corks.*—I much admire your leading article of the 29th respecting insect cabinets at a lower price, and I think at the same time there is something you have omitted mentioning, namely, the very high price charged for rounded corks for setting Lepidopterous insects on, for I think there are very few young beginners that can afford to pay from a 1s. to 2s. 6d. for a rounded piece of cork, which is the price asked at the insect dealers for them, and I think if the prices were anything within bounds more persons would take up with Entomology than now do. I have made all my own setting-corks, breeding-cages, and larva boxes, and shall be most happy to show them, and instruct any young entomologist how he can make them at one-third of the price charged at the dealers; likewise my much admired pinning-box.—W. H. LATCHFORD, 1, *Plumbers Place, Clerkenwell; December 2, 1856.*

*Write before sending any Boxes.*—I have received several boxes containing species which I do not now want, so parties had better write before they send any boxes to me. Several species I have run through, and I do not want to receive any insects without a return on my part. I shall be glad to attend to all as far as my

limited time will allow me, and no one need think anything about not hearing from me for a few days. I wish it distinctly to be understood I only want extra-fine specimens of any species noted in my "wants," because I already possess complete series, and have in duplicate many that I have noted as wanting, only I want to replace the specimens with better ones.—J. B. HODGKINSON, 16, *Bolton Street West, Preston; December 2, 1856.*

*Greedy Collectors.*—I had the good fortune last summer to capture those rare moths the Silaceous Pet, the Saucy Beauty, the Crescent-bearer, the *Allsopia paleales*, and one or two other equally fine things, and I exhibited them at a meeting of the Entomographical Society. The next day I was surprised, not a little, by two letters begging I would let the writers have *fine specimens* of my rarities in exchange for some rubbish or other, I forget what, for I put the letters in the fire. I fancied it was rather strange that two strangers should write at the same time for these insects: I had never been so served when collecting other objects of Natural History than insects, but I, it seems, had something to learn. I told a friend about the circumstance, and he said it would be wonderful if you had not been written to. Said I, "Why I have not told you the names of the writers." "No," said he, "but I know them; the parties always hunt together; they generally get on the scent at the same time; they are like S and T in the alphabet, close to each other. Avoid such men; all they want is to enrich

themselves at your expense, as they have done at the expense of many a young beginner already. Directly they hear of captures, it may be as in your case, of single specimens, they try to make sure of you, and write in the most blarney style." If any one is at all curious to know who these individuals are, let him take some rare moth and record the capture of it, and he will soon learn by being asked for fine specimens.—N. O. BRUCE, *St. John's*; December 8, 1856.

*Attracting Male Moths.*—The insects that I tried on the trees (p. 78) were *Biston prodromarius*, *Eriogaster lanestris*, and several small moths, the names of which I should not like to say, as I am not quite certain which they are. The first I tried was *Biston Prodromarius*; and in less than an hour I captured the male.—W. H. FREMLIN, *Watlington*; December 6, 1856.

*An Instance of one of the many Reasons why we prize certain Insects of our own capturing, be they Rare or otherwise.*—I always had a penchant for *Pyrausta octomaculalis*. It was one of those insects that caused me to turn my attention to the Lepidoptera, in preference to any of the other orders, but I did not possess one. I saw that species in almost every cabinet except my own, and when a friendly parcel arrived, my first exclamation, on opening it, was, "No *Octo*. yet!" One day, while beating in Knock Wood (how appropriate a name for the scene of entomological verberations!), I espied an "eight-spot" hovering among low bushes: I made a desperate sweep with my net—but

in vain, and *Pyrausta octomaculalis* remained a blot in my entomological escutcheon until last year. One beautiful June day, 1855, hovering over low flowers in a hedge, another *Octo*. set my heart-strings on the stretch. (N.B. It is not expedient to draw one's purse-strings in adding a new species to the cabinet.) Excited I was, for there is no mistaking the insect's appearance. Feeling sure of my prize, after a careful aim, I succeeded in taking the little fluttering captive. Did this specimen grace my cabinet? Alas, no! in my anxiety to secure it, I permitted it to escape through one of those rents that *will* come in our nets, severely imposed by exacting brambles. June 25th of the same year,—a day ever to be marked with a white stone,—I not only caught, but also secured a beautiful specimen of my favourite. Though more successful this year, I still highly value my first *Pyrausta octomaculalis*.—S. C. TRESS BEALE, *Ivy Court, Tenterden*.

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#### EXTRACTS.

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*PEST OF LOCUSTS.*—A host of locusts has invaded the districts of Odessa, Ananieff and Robvior. The following fact gives an idea of the enormous numbers of these insects. A gentleman living in the neighbourhood of Odessa invited a large party to a fête at his country-house, and in the evening the place was splendidly lit up with lamps, Bengal lights, &c. Sumptuous sideboards were laid out, and a brilliant and select company had assembled. All looked forward to a merry evening. The windows of

the apartments had been opened, and a refreshing breeze was entering the rooms, when suddenly a loud noise was heard, and a few moments after myriads of locusts filled the rooms, the gardens, sleeping-chambers, and every part of the villa. Fireworks, rockets, &c., were discharged, in the hope of driving away these troublesome guests, but in vain. The company were compelled to leave.—*Edinburgh Weekly Herald*.

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### OBITUARY.

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We regret to observe the loss science has sustained in the death of a useful and energetic entomologist, Henry de la Chaumette, Esq., of Gloucester Terrace, West Green Road, Tottenham.

The readers of the 'Zoologist' will recollect the series of articles which appeared there some years ago from his pen, descriptive of the larvæ of the Sphingidæ, both British and Continental.

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#### DEATH OF MR. DAVID DYSON, THE NATURALIST.

We announce with deep regret the death of Mr. David Dyson, of Manchester, a well-known naturalist, at the early age of thirty-three years, which took place at one o'clock in the afternoon of Wednesday, the 10th inst., at the residence of his brother, Mr. John Dyson, Woodbine Cottage, Rusholme. The cause of his death was ulceration of the larynx.

Mr. Dyson was born at Oldham in April, 1823, and his early years

were passed as a factory worker; but he very soon evinced a passion for collecting insects, and spent every available penny of his hard earnings in the gratification of his love for Entomology. He subsequently devoted himself to making collections in Ornithology and Conchology. His ardour in these pursuits led him, in 1843, to undertake a voyage to the United States of America: he was then twenty years of age, and quite unknown beyond his own neighbourhood, and unfriended, for his own savings and some money given him by his elder brother furnished him with such scanty means for his voyage that, on landing in New York, he had only a few shillings left. His industry and energy, however, enabled him to make a tour in his new profession as collector through the States, across the Alleghany Mountains, and as far as St. Louis, earning the means of subsistence on his way by selling portions of his collections in Natural History to the local museums. After an absence of less than twelve months he returned to England with upwards of 18,000 specimens of insects, birds, shells and plants. This collection was found to contain some very rare specimens, and his success was the source of amazement almost among the leading naturalists, and the late Mr. Hugh Strickland invited him to his father's residence, Cracombe House, Worcestershire, and attempted to engage him, on behalf of himself and a number of other gentlemen, to make a second voyage to America, but the negotiations failed. Being then near London, he took the opportunity to visit that city for the first time in his life, and



found, to his surprise, that his fame as a collector had preceded him thither. At the British Museum he found that the intelligence had reached them of his recent visit to Sir George Strickland's, and an engagement was offered him to go out in search of specimens to Central America, which he accepted.

In corroboration of the statement that he thus early became acquainted with some of the leading naturalists, it may be mentioned that Mr. Edward Doubleday speaks of him in an article on Lepidopterous insects in the second volume of the 'Zoologist,' published in 1844, as "an intelligent young man, originally a weaver at Oldham, whose zeal for Entomology carried him out last year to the United States."

He started for Central America on the 17th of September, 1844, and landed at Belize on the 3rd of November. He remained in Honduras till the latter end of 1845, actively engaged in his vocation, and in the deadly swamps of that country contracted disorders which undermined his constitution, the immediate cause of his return being a sun-stroke at Belize. He was eminently successful, however, and returned to England, after forwarding an extensive and varied collection of insects, shells, birds and reptiles. His collection included an extensive variety of orchideous plants. In this tour he also executed several commissions for the late Earl of Derby and others in live and dead specimens, which were added to the already magnificent aviary and museum at Knowsley. Some of his collection of plants were also presented to the Manchester Botanical Gar-

dens. The chief result of this enterprise, however, was the addition of many thousand specimens to the British Museum.

In 1846 he went out to South America for the British Museum, and travelled in Venezuela, carrying with him many valuable introductions. He was accompanied by his brother, Mr. Amos Dyson, and they returned after an absence of about eleven months, his collection on this occasion including a great variety of humming birds, moths, beetles and shells.

In the latter part of his life Conchology became his favourite study, and he has left behind him a private collection, numbering upwards of 20,000 shells, many of them very rare, and including more than 10,000 different species. He has also left a large collection of birds and insects. These collections, it is said, are very valuable, and equalled by few out of London, and it is hoped that an effort will be made to secure them for some of the local public museums. Mr. Dyson succeeded Mr. Louis Fraser as curator at Knowsley, and he held that responsible situation up to the death of the late Earl of Derby, when the specimens of Natural History collected there by that nobleman were sold. Some years ago he resided for a time with Mr. Cumming, of Gower Street, London, and assisted that gentleman in the arrangement of his extensive collection of shells. He was altogether a self-educated man, and, notwithstanding early disadvantages, his acquirements were considerable. His kind and gentlemanly bearing gathered about him a large circle of highly cultivated men, whose esteem he

returned to the last.—*From the 'Express' of December 12th.*

UNIVERSITY INTELLIGENCE.

*Oxford, December 3.*

#### ENTOMOLOGICAL SOCIETY.

The Oxford University Entomological Society held its first meeting for this Term on Tuesday last. Meetings will take place in future on alternate Tuesdays during Term time, and the first for next Term will be held on Tuesday, January 27, at eight o'clock in the evening.

The above startling intelligence we quote from the *Morning Chronicle* of December 4th. Mr. Hope's collection appears to be producing fruit.

*Now ready, price 3s. 6d.,*

## THE WORLD OF INSECTS; A GUIDE TO ITS WONDERS.

By J. W. DOUGLAS,

Secretary to the Entomological Society of London.

"A charming volume, redolent of the fields and garden, and discoursing most agreeably, as well as learnedly—*corde et manu*—as its motto says. Mr. Douglas is not only an excellent entomologist, but a man of refined literary tastes also, and sees into the heart and poetry of his science. He is the very man to win proselytes; for let the reader be where he may, Mr. Douglas will open for him a world of wonders."—*Northampton Mercury*.

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By H. T. STAINTON.

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*How to catch Micro-Lepidoptera.*

*Where to catch Micro-Lepidoptera.*

*When to catch Micro-Lepidoptera.*

*To collect the Larvæ of Micro-Lepidoptera.*

*Table of appearance of British Tineina.*

*Calendar of British Tineina appearing in the Imago state.*

*On the Habits of Tineina Larvæ.*

*Calendar of British Tineina appearing in the Larva or Pupa state.*

*How to rear Micro-Lepidoptera from the Larvæ.*

*How to kill Micro-Lepidoptera.*

*How to set Micro-Lepidoptera. Entomological localities.*

*Ten Days at Kilmun, with a Trip to the Isle of Arran.*

*On the necessity of the Collector keeping a Journal.*

*Journal of a Larva Collector in 1853.*

John Van Voorst, 1, Paternoster Row.

Printed and published by EDWARD NEWMAN, Printer, of No. 9, Devonshire Street, Bishopsgate Without, London, in the county of Middlesex.—Saturday, December 20, 1856.

# THE SUBSTITUTE;

Or, Entomological Exchange Facilitator, and  
Entomologist's Fire-side Companion.

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No. 10.] SATURDAY, DECEMBER 27, 1856. [PRICE 2d.

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## SCIENTIFIC ENTOMOLOGY.

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ON another page of this day's 'Substitute' we print an extract from a letter of a "labourer," which has given us more pleasure than anything entomological we have read for a long time. It details the method the writer used to discover the name of an insect he had found, and the method was so logical and true that we hope a perusal of it may induce more collectors to follow it than now adopt it. We hope this for the sake of the collectors themselves, because it is a step in advance of their ordinary position when they are able to take up an insect, and, by referring to a book of descriptions, find out what it is. A man who can do this is in advance of his fellows, not simply because he thereby knows some things of which they are ignorant and careless, but because, by means of the educational process of training his mind undergoes before he can attain the facile exercise of its analytical and synthetical powers,

he is in a position to ask for, and obtain, the why and because of the circumstances that operate upon him from all sides, and fashion his life and character. He may thus render himself, to a certain extent, above circumstances, or at any rate make himself reconciled to what he sees is caused by the action of laws of Nature to which he must submit. The man who can trace out the family, genus and species, of a moth or any other insect, has obtained the "open Sesame" of the arcana of Nature's secrets; he sees not merely the fact which he set out to seek, but the connection with others just beyond the circle of his observation, which continually widens, and its horizon grows clearer to his strengthened and enraptured vision. He cannot but be impressed with the idea that Nature has a system of order and gradation, that all the forms and developments are planned and provided for as necessary parts of one great whole. At this condition of intelligence surely a great proportion of our collectors ought to arrive; then, besides the benefits

to themselves we have endeavoured to point out, there would result the advantage to Science that so many more persons being able to discriminate and point out (very different things by the way) variations in form and structure, the observations they made would be serviceable in verifying facts already noted, or in detecting new ones, and would have a value that the enquiries of a less accurate set of men do not and cannot possess. Let our correspondent's proceedings, then, serve as a model for the manner in which collectors of insects should set to work at the science of their subject. A *bonâ fide* case in point like this, showing how the thing *has* been done, is better than a hundred discourses how it *might* be done. It is true that, with several Orders, the want of cheap and good Manuals of descriptions would be much felt, but we have faith enough in earnestness and perseverance to believe that if a certain number of men will a thing, that thing can be accomplished. Only let the demand for these books come, and it will be supplied.

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Dr. J. E. Gray, of the British Museum, has printed a letter (copied in 'The Literary Gazette' of Nov. 8th) in answer to the

question brought forward at the last meeting of the British Association for the Advancement of Science, "Whether any measures could be adopted by the Government or Parliament that would improve the position of Science and its cultivators?" This letter is an able exposition of the position of those who cultivate Science from a love of it, but are obliged to get a living by their labours; and while the author is opposed to a general endowment of Science by the Government, he does not fail to urge an adequate payment of the scientific men in the service of the nation. We can only find room for the concluding paragraph. "We frequently hear the complaint made, that among the students of Science there are but few who take up its pursuit with earnestness and devotion, the great majority contenting themselves with a smattering; and also that the scientific professorships are not remunerating. Both these circumstances are the natural result, as it appears to me, of the evil to which I am anxious to direct attention. How can it be expected that young men should pay for instruction, and devote their whole attention to qualify themselves in a study, the remuneration for which (in the few official situations connected with it) is vastly inferior to what may be acquired by the devotion of much less time and talent to almost any other kind of occupation? The remedy lies, not in increasing the number of professors, but in fairly recompensing the holders of scientific offices, and thereby rendering those positions desirable as a means of securing a respectable living."

## TO CORRESPONDENTS.

*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON, N.E.*

*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

*'THE SUBSTITUTE' will be continued for Twenty weeks, and will be forwarded weekly by post to Subscribers of Five Shillings, which amount may be sent in Postage-stamps to the Publisher. The Paper will always be ready on the Friday, and may be procured of KENT & CO., PATERNOSTER ROW, as well as of the Publisher.*

*Several communications only wait for room.*

J. LINTON.—The fault rests with your bookseller. 'The Substitute,' we repeat, is *invariably* ready at Messrs. Kent & Co. on the Friday.

## DUPLICATES AND DESIDERATA.

*Lepidoptera wanted.*

*Ægeria Bembeciformis,  
Sesia Fuciformis,  
Acherontia Atropus,  
Phragmatobia Urticæ,  
Orgyia cænosa,  
Clisiocampa castrensis,  
Pæcilocampa Populi,  
Endromis versicolor,  
Limacodes asellus,  
" testudo,*

*Platypteryx unguicula,  
Cerura furcula,  
Notodonta cucullina,  
" Carmelita,  
" Dictæa,  
" tritophus,  
" trepida,  
" Chaonia,  
" dodonæa,  
Ptilophora plumigera,  
Gluphisia crenata,  
Semaphora tridens,  
Acronycta Alni,  
" strigosa.*

*Duplicates.*

*Papilio Machaon,  
Colias Edusa (males),  
Thecla Rubi,  
Polyommatus alsus,  
" Argus,  
" Corydon,  
" Agestis,  
Argynnis Aglaia,  
" Cinxia,  
Arge Galathea,  
Satyrus Semele,  
Pamphila Comma, [mis,  
Trochilium Ichneumonifor-  
Macroglossa stellatarum,  
Lithosia rubricollis,  
" complana,  
" pygmæola,  
Setina irrorella,  
Callimorpha dominula,  
Petasia cassinea,  
Notodonta Dromedarius,  
Apatela leporina,  
Acronycta Ligustri,  
Ceropacha Or,  
Leucania littoralis,  
Nonagria Phragmitidis,  
Triphæna limbria,  
Noctua C-nigrum.*

[To be continued.]

H. J. HARDING, 1, York Street,  
Church Street, Shoreditch; Dec.  
8, 1856.

*Erratum.*—Page 88, for  
Lozotænna dumetana, read  
semialbana.

—R. W.

### CAPTURES.

*Carabus intricatus.*—I purpose sending to the next meeting of the Entomological Society four living specimens of *Carabus intricatus*, taken by myself under moss in a wood in this neighbourhood within the last month. This is one of those British insects captured by that celebrated naturalist Dr. Leach, the authenticity of which has been doubted; but why his word was not taken I am at a loss to know. Collectors have paid flying visits of one or two days to this locality without finding it, but such visits, without luck, do not prove that certain things are not in certain places.—J. J. READING, 42, Gibbons Street, Plymouth, December 13, 1856.

*Glæa erythrocephala.*—I will also exhibit at the same meeting no less a rarity than *Glæa erythrocephala*, taken at sugar by me last month. It has been compared with the unique British specimen of Mr. H. Cooke, and that gentleman states that, like his, mine is not the typical insect, but the variety *glabra* of Duponchel.—ID.

### COMMUNICATIONS.

*How I Named my Captures.*  
—In September I met with a gaily-coloured Lepidopterous insect, and was anxious to learn its name, consequently I had recourse

to the 'Manual of Butterflies and Moths.' At page 10 I was instructed that the antennæ of the butterflies have a club-like termination, which was not the case with the insect in hand, so I dispensed with the instructions between pages 10 and 72. Seeing at page 72 that the antennæ of the moths are without a club-like termination, I gave the insect the name Moth. After receiving the instructions at page 73 and a few subsequent pages, I became familiar with the nine groups into which the moths are divided, and I referred the moth to the second group *Bombycina*. At page 107 the *Bombycina* group is divided into twelve families, and the description of the sixth family is as follows:—"Wings variegated; hind wings brightly coloured and spotted, abdomen coloured; antennæ of the male pectinated." And as the moth agreed with the description, I at once referred it to the sixth family *Chelonidæ*. After obtaining the instructions at pages 142 and 143, together with the descriptions of the ten genera, I referred it to the third genus, "F.-w. streaked and spotted;" and when I had read the generic and specific description at page 145, I was satisfied that the name of the moth was *Arctia caju*. In the 'Intelligencer,' page 156, a correspondent asks some one to remove the obstacle that lies in the way of the unclassical entomologist, and wishes to become familiar with entomological language. I would say he must do the work himself; he may be assisted, but no one can do it for him. Two hundred and forty pages of the 'Manual' have appeared; let him

furnish himself with these and examine the insects according to the above rule; by so doing he will by degrees remove the obstacle, and by-and-bye become familiar with entomological language. — H. SCOTT, *Labourer, Eaves Lane, Chorley, Lancashire; December 8, 1856.*

*Leiocampa Dictæa*.—At page 5 of 'The Substitute' Mr. Cartmel tells us that he took fifty brown and green larvæ of *Dictæa*, which fed exclusively on *birch*. Will he pardon me for asking whether he is certain of their being *Dictæa*? I never knew the larva of that species to feed on birch.—REV. J. GREENE, *Playford, Ipswich.*

*Forcing Lepidoptera*.—At page 69 of 'The Substitute' I observe Mr. Clarke asks for any information respecting the forcing of Lepidoptera. When desirous of obtaining early specimens of any insect I put the pupæ into a box with a very thin layer of earth, about February. The box I place upon the chimney-piece, in a room where a fire is burning all day, by which means I have obtained specimens many weeks before their usual time of appearance in the perfect state, as for example:—*A. megacephala* on the 8th of April; *D. capsicola* on the 11th; *C. Verbasci* on the 14th; *S. Ligustri*, *C. curtula*, *N. dodonæa* and *Camelina*, on the 15th, &c., &c. I never found any injurious effects follow.—IN.

*Lasiocampa Quercus*.—One of your correspondents states that he never saw or had a larva of *L. Quercus* that made its cocoon in the autumn. With two exceptions, I have not bred the insect for a long time, but on both these

occasions it turned to a pupa at the end of August. One larva I found in May (I suppose it had hibernated) feeding on bramble. It was then fully  $2\frac{1}{2}$  inches in length, very slender, with rusty hairs, and lilac rings. For some time it was sulky, but at last condescended to eat, spun up in August, and came out the following June (end of) a male. Whether this be *L. Callunæ*, or not, I cannot say, but, with the exception of its being a little larger and darker, I see no difference between it and the ordinary *Quercus*. I must add, however, that there certainly are some marked differences in the larvæ, e.g., the lilac rings, which, if I mistake not, are wanting in *Quercus*. This larva was taken in *Suffolk*. I will now conclude these rambling remarks with an expression of the gratification I have received in reading the highly interesting and instructive notes by M. Guenée, translated in the pages of 'The Substitute,' a feeling in which, I think, all its readers will coincide.—IN.

*Acrolepia pygmæana*.—Would you be so kind as to inform me whether *Acrolepia pygmæana* is double-brooded or not? In the 'Entomologist's Companion' I see it is said to be in the perfect state in May, but I am given to understand, by a friend, that a young and indefatigable entomologist, of the name of Latchford, has bred a dozen or two in October this year. Can this be true?—H. JONES; *December 8, 1856.*

[*A. pygmæana* is in the larva state from July to September; the moths appear in October, but rarely fly: they hibernate, and fly in April and May succeeding.]

*An Entomological Ramble in the  
Isle of Wight.*

[Continued from p. 81.]

Again are we fated to be roused from our repose; but this time the cause is neither *bees* nor other insects, for behold! the wrathful visage of an elderly rustic (appropriately armed with a scythe of huge dimensions) appears above the neighbouring hedge, and a voice demands of us, in no gentle tones, "What we're a-doin' of in that clover?" We pretend not to hear him, and whistle "Pop goes the Weazel;" but on the question being repeated in a voice of thunder, and the voice being followed up by the gaunt person of the querist, we feel that it's time to acknowledge his presence, so we accost him with "Good morning to you!" in a most bland and cheerful voice. This evidently somewhat surprises him: but he soon returns to the one great thought occupying his mind, viz., that we are in *his* clover; so, without returning our salutation, he informs us, in a somewhat milder tone, that "There's a path in this here field, and that that 'ere path is for folks to walk on, and —" "What an extremely fine crop of clover?" we exclaim, turning round rather slowly to admire the field, "Is this all your property?" "'Eas, sir, it be all mine: and when folks comes a-walking through my fields, why they'd better be keeping to the path, or maybe —" "I suppose you don't do much in this way," return we, showing him our day's collecting (for we perceive he's returning to the old idea), "You don't collect British Lepidoptera, do you? Per-

haps only the *Rhopalocera*?" "Why, they're only flies!" says the rustic in a contemptuous tone, "What's the use o' they, I should like to know?" "Perhaps," we reply with dignity, "you are not aware that these flies are worth a good deal of money: these few I have taken to-day I would not part with under five shillings?" "Lor, sir! you don't mean that, do you? Five shillin'! Why, I can get bushels on 'em!" "Of course it depends entirely on the rarity of the respective species as to what price they will fetch," we observe; "and if you can bring any good ones to Pomona Cottage, I shall be happy to give you something for your trouble." "I'll soon get ye some fine 'uns, I lay!" exclaims the pacified husbandman. "Very well! dont forget! Pomona Cottage. Good day to you!" "Good marnin', sir! I'll bring ye up some flies to-morrow, for I knows a capital place fur 'em, that I does!" We walk slowly towards the copse, inwardly rejoicing at having gained a friend instead of a foe, and wondering what sort of insects our new acquaintance will bring us, when our meditations are interrupted by the sudden appearance of *Arge Galathea* (a welcome vision, for we have not beheld it alive for two years), and we rush after it (to the astonishment of our country friend, who has been gazing at us ever since we last spoke to him). It is soon captured and pinned, and we are pleased to see that it is a fine dark male specimen. A large clump of Ragwort next presents to our view a host of *Anthrocera Filipendulæ*, amongst which we find a single specimen of *A. Lonicæræ*;



and though we search for some time no more of the latter species are forthcoming. We next determine to castigate the bushes in our vicinity, and commence on the brambles and nut-bushes. After two or three blows a yellow moth flies out; we bag it, and for the first time in the day do not recognise our capture. (We afterwards found it to be *Harpalyce Pyraliaria*.) We continue our beating, and catch consecutively *Harpalyce russaria*, *Ennomos ilunaria*, *Eupithecia subfulvaria*, and lastly *Harpalyce picaria*. Beating in July is hot work, so we rest for a few minutes, leaning on our beating-sticks. Suddenly, over a tall head of *scabious*, we see an insect appear in an instant of time, that it seems wonderful where it can have sprung from, and we almost fancy that, like the Eastern genii, it has been developed from the air. The graceful tapering form and long slender proboscis, at once show it to be *Macroglossa stellatarum*. We do not know whether to strike at once, or to wait for a better opportunity. Alas! that delay is fatal to our hopes; for, in another instant, seemingly without the slightest effort, the rapid insect is whisking over the highest trees, disappears from our view, and reappears no more. The position of the sun now shows us that it's time to return to our cottage, if we entertain any thoughts of dinner; and so, reluctantly, we turn our steps homewards. On the way, by a sudden lucky stroke, we entrap a specimen of *Lasiocampa Quercus* in full career; and after vainly endeavouring to squeeze the life out of him, we are forced to pin

him alive, though much against our inclination. The only other captures made during the walk consist of *Triphæna Junthina* and *Triphæna interjecta*, both of which we beat out of an ivy-bush. At length hot, tired, and soundly Diptera-sucked, but in the best of tempers, we regain our cottage, and soon our setting-boards wear a motley appearance, well-pleasing to our entomological eye. \* \* \* \* And now it only remains for me to thank the Editor of 'The Substitute' for his kindness in inserting these rambling reminiscences of a stroll that afforded me much delightful occupation; and I cannot help thinking how dull and uninteresting, comparatively speaking, such a walk would have been had I not been alive to entomological sights and sounds. How far the perusal of Mr. Stainton's delightful works (which, in my estimation, are to Science what Macaulay's are to History,) has fostered and increased in me that love for insects, which I have always possessed, I need not say; for I feel sure that every incipient Lepidopterist will agree with me, that never before has the science of insects been presented to us in so interesting and enchanting a form. — ROLAND TRIMEN, 71, Guildford Street, Russell Square.

*Are all Lepidopterous Insects infested with a Parasite or Ichneumonidæ?*—I am induced to ask this question from having bred, during the last six years, nearly 400 of *Macroglossa stellatarum*, and have never yet had a larva but what produced a perfect insect. If any of the numerous readers of 'The Substitute' has ever had the luck to breed a

parasite from this larva and will lend a specimen with its case to me I shall be much obliged. This larva, feeding as it does on the tops of the *Galium* in the most exposed situations, it seems strange that birds and parasites do not attack it. About two years ago I stated this at the Society of British Entomologists as reported in the 'Zoologist,' and I was replied to by a correspondent of the 'Naturalist,' under the signature of "Bombyx Atlas," who, I think, stated that he had bred one. If "Bombyx Atlas" is still in the perfect state, and this should meet his eye, and he will drop me a note on the subject, the favour shall not be forgotten.—H. J. HARDING, 1, York Street, Church Street, Shoreditch; Dec. 11, 1856.

*Announcements of Duplicates.*—It was with great surprise I read, at p. 78, the statement of one of your correspondents, signing himself "One of the Sufferers," of the illiberal treatment he had met with, and I should not do justice to my feelings if I did not state how very different my experience of my entomological brethren has been. I am not aware that I ever made an application for assistance which did not receive an immediate and courteous reply, and I have often read the letters of my correspondents to my friends, as evidence of the good feeling, liberality and interest in one another's pursuits which, I think, distinguish entomologists, even when total strangers to each other. I am sure I have seldom been able to make an adequate return for what has been sent to me, and if it be true that "most of your readers" will

only part with an insect when they are offered a *quid pro quo*, I have been singularly fortunate, for all my correspondents seem to belong to the minority; and, on removing to this country, it was a pleasant anticipation that, on new ground, I might perhaps have an opportunity of repaying some of the load of obligation I was under to many gentlemen personally unknown to me. Perhaps, if your correspondent will have a little patience, he will get both answers and insects; an offer of duplicates in the 'Intelligencer' or 'Substitute' often overwhelms an entomologist with applications, which he may not have leisure time to reply to at once. Every one must speak of the world as he finds it: my experience is that a stingy, bargaining spirit is very rare among entomologists.—EDWIN BIRCHALL, 27, Eden Quay, Dublin; Dec. 8, 1856.

*The Cabinet Question.*—I am able to confirm your remarks, that hitherto absurd prices have been paid for cabinets. I was wanting one, and, on making inquiry for the best place to secure a good substantial article, was referred to London, with the additional information that I should have to pay a guinea per drawer. Now I knew sufficient of materials and labour to satisfy me that this was an exorbitant price. About a month ago I engaged with a person in this place, to whose work-rooms I could have constant access to enable me to superintend the construction of one. I furnished the design, we together selected the wood,—good foreign walnut in the solid for the case and yew for the fronts of the drawers; the latter a very

pretty material for that purpose. I have no partitions between the drawers, they riding on runners working in grooves in the sides of the drawers, thus saving wood, labour and considerable space; the folding-doors are panelled, the tops of the panels being elliptical; this is the only ornament, except the usual plinth and top nosing. The cost to me, including lock, bolts, &c., is a trifle under 5*s.* 6*d.* per drawer. It still wants corking and glazing: I have purchased the cork three-sixteenths of an inch thick, machine-cut; this will cost me 1*l.* 1*d.* per drawer of 15½ by 16½ inches,—of course I do the laying myself; the glass I have also procured, which costs me 9*d.* per drawer. I thus get a really good substantial walnut cabinet complete for a trifle over 7*s.* per drawer: in mahogany it would be something less. I ought to mention that I do not have frames for the glass, a rabbet is provided, and the part on which the glass rests is laid with narrow velvet, or the glass itself could have the velvet attached: this soft bed effectually excludes dust, and a clear view of the insect is thus obtained, so much obstructed by the heavy unsightly frames generally used, effecting a saving, too, of about 2*s.* per drawer. The “benefactor,” therefore, of whom you spoke, is found. The person who constructed mine is ready to do the like again, charging merely for materials and labour. I should be glad to give further information to any one and to superintend the making, as in my own. — GEORGE GASCOYNE, *Newark, Nottinghamshire; December 8, 1856.*

## EXTRACTS.

## THE STUDY OF ENTOMOLOGY.

[Continued from p. 35.]

“If Entomology had no higher claim to our respect than as an interesting amusement, supplying employment for the idle, we should be among its patrons; for something is gained when a human mind is rescued from inactivity and fixed upon an object of research, especially if that object be a part of the great kingdom of Nature. But to speak of the Science as if this were its only purpose would be derogatory to its claims, and in the highest degree unjust to the many intelligent, educated men, who, with great powers of observation and research, have devoted their time to the study of insects. Entomology explains the economy of a world which to most men is as novel as if it were a new creation. The insect world, minute as are its inhabitants, is one in which we discover the existence of all the affections and passions actuating and governing vertebrated animals. Here, as in other kingdoms of Nature, we perceive the effects of oppression and of fear, of courage and of timidity, of the avarice of accumulation and of the indulgence of selfishness. Among the pigmy individuals of this great kingdom we observe in some a cruel indifference to the rights and lives of others; in some an amiable love of offspring and attachment to friends; and among them all, in an exaggerated degree, those peculiarities of habit and temperament, and those contests and

struggles so common in the societies of larger animals and among the nations of mankind. Some insect-families live in sunshine and feed on nectar; some in darkness and filth, preying on carrion; some are timid, but out of sight of their enemies pass their lives in enjoyment, with no weapons of attack and few of defence; others are bold, violent in passion, and cruel in deed, and are armed with horns, and stings, and fanged jaws. The insect world is a world of activities. Each individual has work to do, and is provided with the tools he will want and the instinct to use them. If war be his avocation, he is supplied with lance and sword, with which he fights bravely, conducting his predatory expeditions with caution, but without fear or mercy. If he be a carpenter he carries with him an augur or saw; if a mason he is competent to his work, and has the right tool to execute it skilfully. Some are clothed in gay garments, and spend a short life in selfish gratification; some are clothed in disguise to protect them from their enemies; some have a lustre to frighten their pursuers, and some an armour which defies their power. The caddis-worms of the angler are the larvæ of *Phryganeæ*, and in the clear, shallow pools, where they are found, look like sticks, straws or stones, according to their species, though a more close examination will detect the projected head and legs quickly drawn into the rough case on the approach of danger. Other insects are protected from the scrutinizing search of their enemies by their resemblance in colour or form to the leaves they inhabit, of which

we have an example in the wings of the lappet moth (*Gastropacha Quercifolia*), which resemble brown leaves both in form and colour. The brilliant hues of some insects attractive to us are probably given that they may dazzle the eyes of their enemies and escape their attacks. Some insects are covered with armour, like many of the *Coleoptera*; some are the *Pachydermata* of the insect world, and are by their thick skins protected from injury, like the common forest-fly (*Hippobosca equina*); some are as well protected by spines, bristles, or stiff hairs; while others, like the timber-boring beetle (*Anobium pertinax*) and the spiders, simulate death to escape the murderous attack of their enemies. The inhabitants of such a world, designed by Omnipotence and an essential part of the great scheme of organised life, cannot be uninteresting or unprofitable objects of study for the highest intelligence, though they are among the smallest of living beings. None of them are vocal, and few produce sound audible to man, but they have means of communication one with another, and exhibit all those evidences of sensibility, passion and affection, which, when observed in the reasoning creature—man, are justly believed to be the principal and most important study of the human mind.—*Eclectic Review*. —

NOTES ON NOCTUÆ: FROM  
GUENÉE'S NOCTUELITES.

[Continued from p. 83.]

*Pachetra*.

This genus consists of a single European species. The larva,

which is similar in habit to those of several genera in this family, has a rather curious peculiarity, which consists of a certain velvety appearance, which is not due to any down, but rather resembles an efflorescence like that which covers certain chrysalides, but yet it is not of that nature, and does not come off on being handled, but it is very appreciable to the touch, and feels like a very fine velvet. The caterpillar lives in winter in the middle of tufts of grasses, in woods. The perfect insect passes its life sitting on the trunks of trees, and flies seldom even at night; very different in that respect from *Heliophobus popularis*, with which it has otherwise some relation. (Vol. I., p. 177.)

#### *Cerigo.*

This genus of Mr. Stephens, which I had previously adopted, but in which I was wrong to include *prospicua*, oscillates like many of its allies between *Apamidae* and *Noctuidae*. In form, indeed, it completely recalls to one that division of *Agrotis* which includes *forcipula*. Nevertheless, the abdomen is slightly crested, and the roof-shaped position of the wings in repose have determined me to place it here. The larvæ are somewhat similar to those of certain *Leucanidae*: they live much concealed, and live exclusively on grasses: they live through the winter, and acquire their full size in the spring, but they are delicate; and although the broods are numerous, but a small number arrive at the perfect state. (Vol. I., p. 179.)

#### *Luperina.*

I had before adopted this genus of M. Boisduval, which appeared to me founded on good characters, but, far from approving of the considerable extent which he has given it in his genera, I have still further restricted it than I had done in my Index. Reduced as it now is, it still consists of two very distinct groups, which here require a separate history. The larva of the first group (which consists of a single species not yet found in Britain—*luteago*) have nearly the manners of *Gortyna*, that is to say, that they excavate in the roots of certain plants galleries in which they advance by degrees, as they empty them by eating them; but they only inhabit the stems when quite young. Besides, the chrysalis is not enclosed in the gallery where the larva has lived, so that the perfect insect does not issue by an opening formed beforehand as in the truly endophagous larvæ. A consequence of this manner of living is, that the female of the perfect insect is provided with a long ovipositor, as in *Dianthecia*; and as the larva feeds on Caryophyllææ, M. de Graslin, who has published an excellent memoir on the habits of *Luteago* (in the 'Annales de la Société Entomologique de France,' 1842, p. 313, pl. 13,) on the faith of this apparent conformity, places it in that genus; but even the manners of this caterpillar, the general appearance of this perfect insect, its robust legs, the conformation of its head, and even the markings on its wings, show that it cannot be united with *Dianthecia*. It has, on the contrary,

especially in its perfect state, all the characters of *Luperina*.

The larvæ of the second group live concealed, but not in the interior of vegetables: they are of dull colours, and resemble in manners the *Xylophasiæ*. The perfect insects have all a strong family likeness: they are sluggish, especially the females, of which the abdomen is stout and very elongate. (Vol. I., p. 180.)

[To be continued.]

### PUPA DIGGING.

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No. 11.]

SATURDAY, JANUARY 3, 1857.

[PRICE 2d.]

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## THE NEGLECTED ORDERS.

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To judge by the literature of Entomology in England, so much does the writing about *Lepidoptera* exceed that about all the other Orders, one would think that nearly all insects were Lepidopterous. We need not say that this is not the fact; but the collecting of *Lepidoptera* was first generally taken up, and has become fashionable, to the exclusion of nearly all the other Orders. Like other fashionable things there is much more show than reality; more of making collections than scientific study. But we might as soon think to change the fashion of ladies bonnets, by writing against it, as to make collectors of *Lepidoptera* into entomologists by writing at them: all we would ask of them is to believe they are not supreme. Coleopterists are of more modest pretensions, yet, if generally more scientific men, are still far from knowing what they might about the natural history of beetles: they think more about getting a species than knowing it,

except in its perfect state. As to the rest of the Orders, are there a dozen men in the kingdom who know anything about them beyond the merest generalities? It cannot be that they are intrinsically devoid of interest, for they are all beautiful, and their economy is quite as wonderful as anything in the favoured Orders. The reason why all but the *Lepidoptera* and *Coleoptera* are so much neglected, we believe to be that there are no good English descriptions, or no descriptions at all of the species to be had. The collector of them, if he would learn their names, must wade through a heap of continental books; and as this is not possible for the many, and too much labour for the few, it is not done at all. It is true we now have Mr. Walker's three volumes of Descriptions of British *Diptera*, but we fear the *Diptera* are too numerous to become popular, and these books too expensive to aid in making them so. Mr. Smith's Catalogue of the British Bees is so good that it ought to set some of us upon the study of these Hymenoptera. But for the rest all

is blank. The author of 'Glaucus,' in the third edition of that charming book, has dwelt upon this want in reference to the *Phryganidæ*, and has suggested a plan for supplying it, which we should like to see followed with regard to other Orders, each individual working out one or more Families. Here are his words:—"I said just now that happy was the sportsman who was also a naturalist, and having once mentioned these curious water-flies I cannot help going a little further, and saying, that lucky is the fisherman who is also a naturalist. Among gentlemen-fishermen so deep is the ignorance of the natural fly, that I have known good sportsmen still under the delusion that the green May-fly comes out of a caddis-bait, the gentlemen having never seen, much less fished with, that most deadly bait the 'Water-cricket,' or free creeping larva of the May-fly, which may be found in May under the river banks. The natural history of these flies has not yet been worked out, at least for England. The only attempt, I believe, in that direction is one made by a charming book, 'The Fly-fisher's Entomology,' which should be in every good angler's library. But why should not a few fishermen combine to work out the subject for themselves, and study for the

interests, both of science and their own sport, the Wonders of the Bank? The work, petty as it may seem, is much too great for one man, so prodigal is Nature of her forms, in the stream as in the ocean. But what if a correspondence were opened between a few fishermen, of whom one should live—say, by the Hampshire or Berkshire chalk-streams; another on the slates and granites of Devon; another on the limestones of Yorkshire or Derbyshire; another among the yet earlier slates of Snowdonia, or some mountain part of Wales; and more than one among the hills of the Border and the lakes of the Highlands. Each would find (I suspect) on comparing his insects with those of the others, that he was exploring a little, peculiar world of his own, and that, with the exception of a certain number of typical forms, the flies of his country were unknown a hundred miles away, or, at least, appeared there under great differences of size and colour; and each, if he would take the trouble to collect the caddises and water-crickets and breed them into the perfect fly, in an aquarium, would see marvels in their transformation, their instincts, their anatomy, quite as great (though not perhaps as showy and startling) as I have been trying to point out on the



sea-shore. Moreover, each and every one of the party, I will warrant, will find his correspondents (perhaps previously unknown to him) men worth knowing, not, it may be, of the meditative and half-saintly type of dear old Isaac Walton (who, after all, was no fly-fisher, but a sedentary 'pop-joy,' guilty of float and worm), but rather like his fly-fishing disciple Cotton, good fellows and men of the world, and perhaps something better over and above."

We had something more to say which we must, for want of space, reserve for another occasion.

Mr. J. C. Bowering, of Hong Kong, at present on a visit to this country, has just purchased the collection of Rhyneophorous Coleoptera of M. Jekel, of Paris, well known for his long and assiduous study of these beetles. This collection, consisting of more than 10,000 species, includes that of M. Gory and others, and is the richest ever formed in this section of *Coleoptera*. Mr. Bowering, although about to return to China, will not take this collection with him, but will deposit it in the British Museum for the use and benefit of his countrymen. Such munificence as this needs no comment, and is above all praise. But few persons have the power thus to confer a benefit on Science, and still fewer have the inclination to act with such disinterested liberality.

## TO CORRESPONDENTS.

*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON, N.E.*

*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

*'THE SUBSTITUTE' will be continued for Twenty weeks, and will be forwarded weekly by post to Subscribers of Five Shillings, which amount may be sent in Postage-stamps to the Publisher. The Paper will always be ready on the Friday, and may be procured of KENT & CO., PATERNOSTER ROW, as well as of the Publisher.*

*Several communications only wait for room.*

Mr. Robert Drane has ordered and paid for certain numbers of 'The Substitute:' they were posted, as requested, to 22, Frederick Street, Cardiff, and have been returned "not known."

W. BUCKLER. — "Copland's Borneote of Petrolene" is sold in London by J. Sanger, 150, Oxford Street, in bottles at 6d. and 1s. each.

Letters received from T. W., E. G., G. G. and D. W., and forwarded to H. A. S. as requested.

# DUPLICATES AND DESIDERATA.

*British Coleoptera in Exchange for British Lepidoptera.*—Having but lately commenced collecting *Lepidoptera*, and in consequence possessing few specimens for exchange, I should be glad to enter into correspondence with any entomologist who may be willing to receive *Coleoptera* for *Lepidoptera*. Of the former I have a large stock of duplicates, and as I do not like asking specimens without the possibility of making any return for them, will you make known my wishes in the pages of your useful little journal?—J. T. SYME, 12, Gordon Street, Gordon Square, London; December 11, 1856.

*Lepidoptera for Exchange.*—I have the following species of *Lepidoptera* for exchange.

*Thecla* *Quercus*,  
*Trochilium* *Tipuliformis*,  
*Euchelia* *Jacobææ*,  
*Orgyia* *pudibunda*,  
     *gonostigma*,  
*Hepialus* *hectus*,  
*Ceropacha* *diluta*,  
*Caradrina* *cubicularis*,  
     *blanda*,  
*Leucania* *lithargyria*,  
     *littoralis*,  
     *impura*,  
     *pallens*,  
*Hydræcia* *nictitans*,  
*Miana* *furuncula*,  
     *fasciuncula*,  
     *strigilis*,  
*Xylophasia* *hepatica*,  
*Triphæna* *fimbria*,  
     *janthina*,  
*Cerigo* *Cytherea*,  
*Noctua* *umbrosa*,  
     *bella*,  
     *baja*,

*Noctua* *festiva*,  
     *brunnea*,  
     *triangulum*,  
     *C-nigrum*,  
*Chersotis* *pecta*,  
*Tæniocampa* *gothica*,  
     *munda*,  
*Orthosia* *lota*,  
     *macilenta*,  
*Anthocelis* *lunosa*,  
*Cosmia* *affinis*,  
*Xanthia* *ferruginea*,  
     *rufina*,  
     *silago*,  
     *cerago*,  
*Scopelosoma* *satellitia*,  
*Polia* *serena*,  
*Hadena* *dentina*,  
*Euplexia* *lucipara*,  
*Thyatira* *batis*,  
     *derasa*,  
*Xylina* *lithoriza*,  
*Heliothis* *heliaca*,  
*Abrostola* *triplasia*,  
*Philopyra* *Tragopogonis*,  
*Pyralis* *farinalis*,  
*Aglossa* *cuprealis*,  
*Hydrocampa* *lemnalis*,  
     *Nymphæalis*,  
     *Potomogalis*,  
*Ebulea* *Sambucalis*,  
*Rivula* *sericealis*,  
*Hypena* *rostralis*,  
*Epione* *apiciaria*,  
*Ennomos* *angularia*,  
*Hibernia* *aurantiaria*,  
*Biston* *Betularia*,  
*Boarmia* *repandaria*,  
     *rhomboidaria*,  
*Hemerophila* *abruptaria*,  
*Eubolia* *multistrigaria*,  
     *didymaria*,  
*Harpalyce* *fulvaria*,  
     *Chenopodaria*,  
     *pyrallaria*,  
     *achatiuaria*,  
*Bapta* *temeraria*,  
*Ephyra* *punctaria*,

Timandra imitaria,  
 Odezia Chærophyllaria.  
 I am in want of the following :

Colias Hyale,  
 Thecla Betulæ,  
 „ Pruni,  
 „ W-Album,  
 Pamphila Actæon,  
 Procris Globulariæ,  
 Nudaria senex,  
 Phragmatobia Urticæ,  
 Orgyia cænosa,  
 Clostera curtula,  
 Acronycta strigosa,  
 „ auricoma,  
 Simyra venosa,  
 Hydræcia Petasitis,  
 Luperina cespitis,  
 „ Dumerilii,  
 „ abjecta,  
 Crymodes Templi,  
 Noctua depuncta,  
 Chersotis agathina,  
 Spælotis ravidæ,  
 Dianthæcia albimacula,  
 „ Carpophaga,  
 Eremobia ochroleuca,  
 Hadenæ suasa,  
 „ rectilinea,  
 „ Atriplicis,  
 Xylina rhizolitha,  
 „ petrificata,  
 „ semibrunnea,  
 Aporophila australis,  
 Anarta cordigera,  
 Plusia inscripta,  
 „ bractea,  
 Abrostola Urticæ,  
 Brepheos Notha,  
 Hydrelia uncanæ,  
 Odontia dentalis,  
 Pionea margaritalis,  
 Botys terrealis,  
 Epione advenaria,  
 Eupisteria carbonaria,  
 „ quinquaria,  
 Coremia Salicaria,  
 „ Ligustraria,

Anticlea sinuaria,  
 „ derivaria,  
 „ Berberaria,  
 Steganolophia Ribesaria,  
 Harpalyce sagittaria,  
 Cheimatobia autumnaria,  
 „ filigrammaria,  
 Epbyra trilinearia,  
 Acidalia Blomeri,  
 Timandra pratensis,  
 „ emutaria,  
 Hyria auroraria,  
 Siona dealbaria,  
 „ nivearia,  
 Minoa Euphorbiaria.

—WILLIAM KIRBY, *South Street,*  
*Wandsworth, Surrey; December*  
*15, 1856.*

### *Lepidoptera.*

#### DUPLICATES.

Papilio Machaon,  
 Gonepteryx Rhamni,  
 Colias Edusa,  
 Lasiommata Ægeria,  
 „ Megæra,  
 Hipparchia Semele,  
 Cœnonympha Davus,  
 Cynthia Cardui,  
 Vanessa Polychloros  
 Polyommatus Artaxerxes,  
 Thymele Alveolus,  
 Chærocampa Porcellus,  
 Hepialus Humuli,  
 „ Sylvinus,  
 Pygæra Bucephala,  
 Phragmatobia fuliginosa  
 (larva),  
 Spilosoma Menthastræ,  
 Lasiocampa Rubi (larva),  
 Gortyna flavago,  
 Glæa satellitia,  
 Charæas graminis,  
 Mamestra suasa,  
 Calocampa vetusta,  
 Scoliopteryx libatrix,  
 Abraxas grossulariata,  
 „ Ulmata,

and some others.

## DESIDERATA.

Leucophasia Sinapis,  
 Arge Galathea,  
 Argynnis Adippe,  
 Nemeobius Lucina,  
 Thecla Rubi,  
 „ W-album,  
 Polyommatus Argiolus,  
 „ Corydon,

Steropes Paniscus,  
 Procris Statices,  
 Smerinthus ocellatus,  
 Zeuzera Æsculi,  
 Endromis versicolor,  
 Cerura vinula,  
 Notodonta Dromedarius,  
 Pterostoma palpina,  
 Clostera reclusa,

„ curtula,  
 Psilura monacha,  
 Porthesia auriflua,  
 Euthemonia russula,  
 Lasiocampa Trifolii,  
 Eriogaster lanestris,  
 Odonestis potatoria,  
 Gastropacha quercifolia,  
 Apatela leporina,  
 Mamestra Persicariæ,  
 Catocala Fraxini,  
 Hipparchus Papilionarius,  
 Pterophorus pentadactylus,  
 „ pallidactylus,  
 Alucita hexadactylus.

—DAVID P. MORISON, 49, King Street, Perth.

*Lepidoptera*.—I am in want of the following:—

Lithosia mesomella,  
 Orgyia fascelina,  
 Luperina connexa,  
 Noctua Dahlii,  
 „ depuncta,  
 Orthosia Ypsilon,  
 Euporia fulvago,  
 Xanthia aurago,  
 Polia serena,  
 „ Chi,  
 Aplecta occulta,

Aplecta tincta,  
 Anarta Myrtilli,  
 Plusia inscripta,  
 Fidonia plumaria,  
 Nyssia zonaria,  
 Coremia erutaria,  
 Eudorea murana,  
 Gelechia desertella,  
 „ mundella,  
 Elachista apicipunctella.

I cannot at present send anything in return; but if those who send me duplicates will state their wants I will endeavour to supply them. Boxes and stamps will be returned immediately. I should be much obliged if any one could assist me with the pupa of *Cerura vinula* and of *Hybernina progemmaria*.—C. KNIGHT, 19, Darley Street, Leeds.

## COMMUNICATIONS.

*Phlogophora empyrea*.—In referring to my letters to you of the 20th and 27th of October, there appears some discrepancy. I made the captures of *P. empyrea* on the 14th and 18th of October,—three on the 14th and one on the 18th, making two pairs. Mr. Hemmings is in error in stating that I effected my captures on the 15th of October. Thinking that nothing but the truth should appear, I give the explanation.—GEORGE SMITH, 9, King Street, Brighton; Dec. 13, 1856.

*Phlogophora empyrea*, &c., at Brighton.—It appears that the observations made by myself and Mr. Winter and the editorial note in No. 1 of the 'Substitute,' have given offence to some individuals here; for various reasons, it was well known at the time those ob-

servations were penned that such would be the case. Several statements in reply have since been made, none of which, I think, call for any notice from me, but my friends in different parts of the kingdom have so strongly urged me to reply that I now consent, solely with a view to give those who know nothing of Brighton and its collectors a more correct idea of the position of things. Now then for Mr. Hemmings, and first let me thank him for his clear information ('Substitute,' No. 3) as to the capture of specimens: I place the most implicit reliance on the correctness of this statement. I have known Hemmings as a collector for many years, and I say confidently that I know no one less likely to have anything to do with passing off foreign insects as genuine British ones; but, at the same time, I must tell Hemmings that he has no right to grumble because other people have sources of information which he has not, or, as he phrases it, "are better informed" than himself. In this case I have the misfortune to be "better informed," and should be only too glad to be in a position to make active use of my information, but unfortunately, at present, I cannot do as I wish, for reasons he will hereafter see. I feel the more surprised at Hemmings, because he really is an entomologist. So much for Hemmings, and I now proceed to examine the statements purporting to be written by a man of quite a different stamp,—George Smith, of No. 9, King Street, Brighton. To those who know anything of Brighton and the relative positions of Smith and myself I must apologize for noticing

him. Well, this individual has given us no less than three different statements as to the captures of *empyrea* (see 'Substitute,' Nos. 3, 4 and 5), no two of which agree either as to dates or numbers,—indeed, the difference is so great that the editor no doubt thought they referred to different transactions, or he would never have been so far imposed on as to print the same story three times over in different terms: the last of these three statements is distinctly styled a "truthful" one; is this intended as an admission that the two former were intentionally false? That *empyrea* has been captured I know perfectly well, but I beg to say most distinctly that I do not place the slightest reliance on either of these three statements signed by Smith: I utterly discard them as not being worth a moment's consideration. These statements were not written by Smith at all, but were composed by different individuals for, and copied or signed by him: I happen to know where and by whom the precious documents were concocted. One individual connected with their production is honest enough in himself, but I place no faith in the statement he has produced, for the simple reason that he derived his information from Smith. For the present I have done with Smith. Now for a few general observations on the subject of *empyrea*, and the introduction of foreign specimens of that and other species to Brighton. From rumours afloat in this town I was led to suspect that there were foreign specimens of several species then here with a view to their being passed off as British: I im-

mediately commenced a series of inquiries, and became fully convinced the report was founded on fact. I, assisted by my friend Mr. Winter, took the earliest opportunity of cautioning the public; on the 14th of October I announced (see 'Substitute,' No. 1) the capture of *empyrea*, and at the same time stated there were foreign specimens in the town; on the 15th of October Mr. Winter wrote a paragraph to the same effect (see No. 1). Soon after this I became aware of the capture of *empyrea* by other collectors, and, lest my communication in No. 1 should be misunderstood, I wrote, in time for No. 2 (see the date), a statement to that effect; it so happened that this was not published until No. 3 (see p. 27). If any such evidence were needed, this would at once show that I was by no means anxious to suppress information of the doings of other people; on the contrary, I was the first to announce the capture of this species by other collectors! The "genius" who wrote Smith's statement in No. 5 was, in all probability, too fast asleep to read this paragraph, or to discover the evident fairness which dictated it. I have now lying before me very many letters from gentlemen of the highest respectability, which prove beyond a question that foreign specimens of *empyrea*, *alniaria* and *erythrocephala* have been brought into this town, and the purpose for which they were introduced is but too evident; nor are these the only species: some very close (and no doubt inconvenient) inquiries are now being made relative to *versicolor*, *rubiginea*, &c., and these inquiries extend to the

season of 1855, as well as to that more recently past. I have sufficient evidence to expose most extensive frauds, but unfortunately it is contained in confidential communications, of which at present I can make no public use. Any sensible man will see that there are great difficulties in the way of clearly proving transactions of this kind, and, after all other difficulties are surmounted, it is no easy matter to induce those who possess the necessary information to stand forth as public executioners and expose themselves to the inevitable bullying. One eminent entomologist writes me as follows:—"As honest men rarely like to incur the ill-will of rogues by exposing them, the rogues, if cunning enough, generally have the best of it, in this world at least." This is true as Gospel! Well, aiming at a public service, I have tried to put a check on the proceedings of certain rogues, and there can be no mistake about the amount of ill-will I have incurred by so doing; for this I care not. But there is another class of people whose anger I have aroused, towards whom I feel differently: quite distinct from the rogues referred to in the above extract may be found a class of people, honest and straightforward in their intentions, but whose ideas and means of information are limited, who are no less angry and spiteful with me than the rogues themselves: these people do not appear to deem it possible that there can be other persons in the world who have greater facilities for acquiring information than themselves: true they only exhibit the narrowness of their own intellects, and make themselves look

very ridiculous, but of course you cannot convince them of it,—as applied to them argument is useless, and they growl and grumble away at the rate of something like forty-donkey power! Never mind, it appears to please them, and it does me no harm. I could explain much more relative to this subject, but refrain: I am aware of certain funny movements, and I also know who “pulls the strings.” Since I first published the statement that foreign insects were here, I have been favoured with very many kind letters on the subject from strangers as well as from old friends: some of the letters, from want of time, have not been answered; I therefore take this opportunity of thanking all those who have so kindly assisted me with information, and I do strongly hope that ere long some of them will raise their courage sufficiently high to enable them to come forward and make a proper use of their information by publicly exposing the nefarious transactions of some of these scamps: depend upon it you will have the honest portion of the public with you, and you need not fear the rest, even though a George Smith be employed to throw dirt at you! (The above allusions to inquiries and extensive frauds relate to other places as well as Brighton.) Whatever may be the amount of abuse levelled at me, in all probability I shall take no further notice of it, so the grumblers and others may indulge themselves in as much as the editor of the ‘Substitute’ thinks proper to print.—H. COOKE, 8, Pelham Terrace, Brighton; December 13, 1856.

[We hope the parties upon whom Messrs. Cooke and Winter

have relied for their information that foreign specimens of *P. empyrea*, &c., were to be sold as British ones, will come forward, and prove the case. If they do not, the inference will be against them. The game is in their hands, if they will only make the move,—that is, name the parties.]

*Plusia Gamma* out in December.—I have to-day bred *Plusia Gamma*: this is the fourth I have had out of chrysalis this week. The larvæ were taken from a bed of mint during September and October, and have ever since been kept in a box in the open air on the north side of a wall, where not a ray of sunshine can reach them. Their late appearance is very curious.—H. COOKE, 6, Pelham Terrace, Brighton; December 13, 1856.

*A Plea for Insects*.—I am haunted by a feeling, which is perhaps no more than a nervous hallucination, that many people take in the ‘Fireside Companion,’ and devour it with fiendish eyes, whose principal object it is to get up crafty plans of more wholesale capture and destruction for the ensuing year. Inspired by that pity for the oppressed which warms the heart of every true Briton, I have come forward, duly commissioned, I assure you, by the whole insect race (the *Arachnidæ* of course excepted), but especially on behalf of those most injured fair ones, the *Lepidoptera*, whose true knight I announce myself in the face of all gainsayers. It is not generally known, at least not by these fierce fanatics of our fraternity, that moths and butterflies are not Amalekites, nor savages, but creatures as cultivated in their ideas,

and as polished in their manners, as any members of the Entomological Club; and it is believed by many who are the best qualified to give an opinion on so abstruse a subject, that their devotion to Science is truly disinterested and sincere, for they have been known, the rarest and fairest of them, to throw themselves unsought into some true entomologist's net, as Curtius did once into that Roman chasm, from the single, and I must say somewhat singular, desire of appearing in the next 'Intelligencer' or 'Substitute.' Anxious, however, as my constituents are to advance the cause of Science by moderate self-sacrifice, they are no less awake than ourselves to the necessity of self-preservation, and of guarding their rights and liberties against Goths and Vandals. The passing year has been one of great excitement to them all: they perceive with pleasure that extraordinary interest which is being felt in them by so many ardent minds; but at the same time, they cannot divest themselves of apprehension that this increase of admiration and renown may be attended with serious personal inconvenience; and it is in consequence of a resolution passed at a meeting of senatorial *Bombyces* in the Metropolitan District, who had for some time been laying their reverend heads together in consultation on this subject, that I have been commissioned to write to you this letter. Their propositions are simple and reasonable, and such, they trust, as all their real friends and admirers will willingly accede to.— I. That a short code of laws be framed for their protection, in a spirit entirely different from the

Game Laws, which entomologists justly abhor, but stringent withal, and especially aimed against three classes of our fraternity—thus tabulated by their worthy secretary *Pygæra Bucephala*, who is partial to big B, and is a complete master of the tables in the 'Manual:':— BB. The "boys under fourteen," whom Mr. Stainton does not receive, and who, in the northern part of our island, amuse themselves with bottling *Artaxerxes*. BBBB. The *rabid* collector who snaps at everything right and left, and pinches and pins indiscriminately and insatiably, actuated by no higher pastime than the *amor habendi*. BBBBBBBB. The collector who kills to sell, or (one would think) to eat; for, for what other purpose could a man catch and pin 500 *Cinxia* or 2000 *Corydon*—a monstrous fact which appeared in evidence before the *Bombyces* by two worn specimens of the respective species escaped from the Isle of Wight. Yes, Mr. Editor, I saw them with my own eyes, from three to six on a pin, enough to take a mau a short life to relax and set; and all taken last season, probably at the same time that your kind-hearted 'Rambler in the Isle of Wight' was rolling in the clover, or contemplating the beauties of his captured *Cardui*. — II. That they should have their Sunday Bill—in other words, that they should be allowed one day out of seven for worship and recreation, which in their case, are synonymous terms. The evidence before the *Bombyces* on this point was indeed heart-rending, and made their very hair stand on end. It appears that on that day, when every true entomo-



logist is at church with his family, or enjoying with them the quiet beauties of Nature or the delights of home, a horde of unkempt and merciless savages regularly sally forth from London, Manchester and other large towns, and ravage every wood in their neighbourhood; beating, sweeping, smoking, and sugaring, as if their sole object was to rid the world of the delicate creatures they profess to admire. Now, surely, Mr. Editor, such men are a reproach to Science. I always thought that the study of Natural History was a humanizing, Christianizing study, directly tending to make men peaceful and pious. Who does not see this in White of Selborne? How holy, and genial, and benevolent, was his tone of mind! How different was he from the excited, restless, godless fellows, who now turn an innocent recreation into a consuming passion, to the indulgence of which man's highest duties are mostly sacrificed! It is true a man must have recreation: but must he not also have religion? Even Lord Palmerston would allow this; and if the two are incompatible, which must be sacrificed, religion or recreation? But I maintain that they are compatible, and that where there is a will there is a way even for the working man to have both—to worship God and to catch butterflies. But I am getting rather long and rather warm too; however, I believe I have said my say, and commend these two propositions to the consideration of your readers.—E. HORTON, *Wick, Worcester*; December 18, 1856.

[We are not going to open our

pages to arguments on this Sunday question, but we like the tone of our correspondent's remarks, and give them as the expression of his opinion. But we should like to know what good would come if the men alluded to were debarred from collecting on the Sunday? They would probably spend the time in idleness, in drinking or worse. They will not go to church; they have no sympathy with it, nor will they have so long as the church shows so little sympathy with them. All history shows it is vexatious and dangerous to interfere with men's recreations. Men are not to be made good by force; and they had better, we think, be allowed to go to the woods and fields than left to the temptations of the town and public-house.]

*What's his Name?*—On placing *Grammophora diptheroides* in my cabinet the other day, I noticed that the name is wrongly spelt at pages 5294 of the 'Zoologist,' and 83 of the 'Substitute.' In both places it stands *diptheroides*. Guenée and Stainton have it *dipthera*, which I suppose is right. In Doubleday's list it is spelt *diphthera*. Perhaps our learned friend "*Proh Pudor*" will be so kind as to inform us which is the proper mode of spelling it.—N. COOKE, 6, *Wentworth Street, Everton, Liverpool*.

*The Packing of Specimens to Correspondents*.—In the last number of 'The Substitute' are some remarks on packing specimens to correspondents. Allow me to add a word on the packing Coleoptera. Though these latter are not liable to breaking in two like a corpulent moth, they are by no

means proof against injury if the box gets crushed in the post, or a pin comes out; the former accident is best guarded against by using a box sufficiently strong to resist the efforts of the post-office stampers, who I fancy are selected for their muscular strength, and enveloping the same (the box, not the stampers) in cotton wadding, which adds little or nothing to the weight. The other casualty is avoided by fixing the pins well in, using cross pins with heavy insects, and by putting a lump of cotton on the top of all, which will arrest the movements of any stray insect which might, after all, break loose, and prevent its doing injury to itself or comrades. —GEORGE GUYON.

*Acherontia Atropos*.—In the last 'Substitute' Mr. Morris has stated his opinion of there being some puzzle in the short period assigned to *Acherontia Atropos* for its final transformation. If the following facts are of any use they are at your disposal. I had three larvæ of *Atropos* last year nearly full grown; one entered the earth on the 14th of September, another on the 27th, and the third on the 2nd of October, 1855. Their cage was kept within the house until one emerged from its pupa state on the 28th of September, 1856, quite perfect, and another on the 30th of September, 1856, with crippled wings. At the end of October I found the third pupa was dead. I had one larva this autumn brought to me two inches long on the 27th of September; it fed on potato leaves, and at the end of nine days had attained the length of  $4\frac{1}{2}$  inches; it then ceased to feed, and became black

in three days, when it died. By this it appears the larva existence is very brief, and the pupa of considerable duration. — WILLIAM BUCKLER, *Lumley Cottage, Emsworth*; December 18, 1856.

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### OBITUARY.

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We regret to have to announce the death of two entomologists, who, but six weeks ago, acceded to the wish of the editor of the 'Entomologist's Annual' in allowing their names to appear in the Supplemental List of British Entomologists: we allude to Mr. Thomas Fathers, of Witney (who contributed two notices to the 'Intelligencer' under the signature of T. F.) and G. S. Heales, Esq., of Doctors Commons, who, though comparatively an idler in these busy times for entomologists, was well known to the frequenters of the Annual *Réunions* of the Entomological Club, at Birch Wood, for his agreeable *bonhomme*.

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Printed and published by EDWARD NEWMAN, Printer, of No. 9, Devonshire Street, Bishopsgate Without, London, in the county of Middlesex.—Saturday, January 3, 1857.

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[PRICE 2d.

## THE NEGLECTED ORDERS.

To resume where we left off last week. We would recommend to any fishermen who may take in hand to work out the British species of the *Phryganidæ* and their allies, the great work of Pictet, 'Recherches pour servir à l'Histoire et à l'Anatomie des Phryganides,' and the memoirs of the same author published in the 'Mémoires de la Société d'Histoire Naturelle de Genève,' Tome VII. If these works be taken as the ground-work of their investigations, they may find that all, or the greater part of our native species, are there described, and their natural history set forth; and if it should prove otherwise, the study of them will make their labours easy and more pleasant. In a new country it is always an advantage to have as a guide one who knows something of it and the manners of the inhabitants.

We had written so far when the appeal on behalf of the Hemiptera by Mr. B. Cooke (ante p. 77) came to hand. It corroborates exactly

what we have said, that the great want in this country for those who would investigate any fresh Order of insects is a guide book. As regards the *Hemiptera*, some years have now elapsed since a volume of descriptions of the British species was undertaken by Mr. Dallas, as one of the series of the 'Insecta Britannica,' but we hear nothing about it being in preparation, although the other promised volumes of the 'Insecta Britannica' have been published. We think the committee, under whose superintendence these works have been produced, must feel that while any part of the series originally promised, and for which series subscribers' names were obtained, remains in abeyance, they have not kept faith with their subscribers. We have every reason, from the well-known intimate acquaintance of Mr. Dallas with the *Hemiptera* and *Homoptera*, to believe that it is from no want of ability on his part that the work is delayed, and we presume that there can be no want of material, or Mr. Dallas would not have undertaken the work. We think,

therefore, that the subscribers and the public have a right to expect some explanation of the delay in the appearance of the volume in question; and if, from any cause, Mr. Dallas is unable or unwilling to fulfil his engagement with the Committee, that they should put the work into other hands.

With regard to the *Coleoptera*, we believe that there are plenty of able men in this country that could among them produce a "Manual" of that Order. Stephens's has become, to a great extent, obsolete; partly because so many varieties are described as species, partly because species are misquoted, partly because the descriptions themselves are inefficient, and partly because the classification is not in accordance with the advanced ideas of the time. We mean no disrespect to Mr. Stephens by these remarks: when we think of the immense number of species of *all Orders* that he described, his labours seem wonderful; indeed, it is the extent of the field in which he worked that is mainly the source of the imperfection now felt. We should like to know how a Manual of British *Coleoptera* issued in parts, at a low price, would be likely to be received and supported. The cost would be great, too great for any individual to risk without reasonable prospect of its being

met by the entomologists of Britain; but if the project should be properly entertained we would endeavour to induce those who could do the work to do it. Then, with such a work as this in their hands, the entomologists of Britain might not only make themselves acquainted with the species of *Coleoptera* already known to be in the country, but might, nay must, discover new ones; and further, be able to add to the knowledge of the natural history of the Order which offers such a wide and little-explored field of research. The labours of the continental entomologists in this respect contrast very favourably with those of the English, and it is time we were up and doing.

The 'Annual' of this year has supplied one of our wants by a Synopsis of the Dragon-flies: this is a good instalment.

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#### TO CORRESPONDENTS.

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*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON, N.E.*

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*It is particularly requested that all Names of Insects may be written plainly and without abbreviation, and that they may be arranged in the order of any of the printed lists.*

'THE SUBSTITUTE' will be continued for Twenty weeks, and will be forwarded weekly by post to Subscribers of Five Shillings, which amount may be sent in Postage-stamps to the Publisher. The Paper will always be ready on the Friday, and may be procured of KENT & CO., PATERNOSTER ROW, as well as of the Publisher.

Several communications only wait for room.

J. WOODS. — Declined with thanks.

H. H. MERRIMAN. — The insects are too common to deserve particular notice.

H. DORVILLE. — Letter received and forwarded to the party mentioned.

## DUPLICATES AND DESIDERATA.

*Pionea Stramentalis*. — I have a considerable number of *Pionea Stramentalis* in duplicate to exchange for any species not indigenous to this county. — EDWARD SMITH, Turkey Street, Worcester.

## COMMUNICATIONS.

*Fungus on Pupæ*. — Will any of your correspondents oblige me by informing me of some method of preventing pupæ from being attacked by a kind of Fungus which destroys them? — F. B. W. WHITE, 2, Athole Place, Perth; December 19, 1856.

*The Sugar Bait*. — I hope you

will pardon my troubling you, but as I am a very old entomologist, born before sugaring was known, and as I am again taking up my favourite amusement, I shall feel obliged by your giving me the plain and simple way of making this very enticing syrup. I find in Mr. Shield's work on 'Moths and Butterflies' a recipe for it, but I do not understand what some of the ingredients are intended for. He begins by recommending the following "Sugar." Now I can find no sugar mentioned in the body of his recipe, and I find a something called "Foots." May I request the favour of your telling me what it is, and where to be obtained? — T. W. EDWARDS, Bilsington, Ashford, Kent; December 22, 1856.

["Foots" is the name for the sugar that is saturated with molasses which drains downwards in the casks in which sugar is imported from the West Indies. The recipe of Mr. Shield is good, but we have found the mixture efficacious without the honey and essential oil of almonds.]

*A Revival*. — As I have not appeared for many years among my brother entomologists I have no doubt many think I am dead, and I am afraid many of them are gone before me, but I can assure you that there is not one of your friends more devoted to the Science than I am, and very few have spent so much money in following it. I am an old friend of the late Mr. Haworth; and Mr. George Waterhouse, although much my junior, was the first that called my attention to the British insects: he was with me when I discovered the genus *Phlœobius*

*Edwardsii* of Stephens, and was the first that pointed it out as a new genus. I find that I have now to find out nearly a hundred new species that are quite strangers to me. If there is any thing to be found in this neighbourhood that you can point out, either in the *Coleoptera* or *Lepidoptera*, I shall be obliged.—ID.

*Structure and Habit.*—I venture to differ with the author of the leading article in the 'Substitute' of December 20th. I hardly think that the expression of M. Guenée will strictly bear the interpretation there put upon it. The words in the original text are, "Les chenilles de la seconde série, ou Nonagrides, ont des mœurs particulières qui entraînent des modifications dans leur organisation."—Vol. v. p. 65. The word *entraînent*, if translated literally, would signify "drag with them," or "bring with them" modifications in their organization,—certainly not "necessitate." The clear meaning, however, of the passage, which cannot perhaps be translated literally into English, is that "the peculiar habits of the Nonagridæ require modification in their organization." Even the translation, as you have given it, will not bear the construction you intimate in the subsequent remarks: to bear out this supposed meaning of M. Guenée, the word "necessitate" ought to be "cause" or "produce," for it is quite clear that if the manners or habits of the caterpillars *necessitate* modifications in their organization, the design of the organs was simultaneous with the manners or habits; in other words, the passage may be fairly read, "The

habits of the larvæ of the *Nonagridæ*, differing from those of the rest of the family *Leucanidæ*, require that they should be provided with an organization modified to suit their different mode of living."—C. R. BREE, *Stricklands, Stowmarket*; December 24, 1856.

[We had not the original, but only the translation (by another hand), before us when we wrote the article in question. We are glad there was a *lapsus calami*, and thankful it has been pointed out. Independently of the quotation, however, we think our views are sound, and the article may do good in inducing some persons to think about the subject who never thought about it before.]

*Aporia Cratægi.*—Through the liberality of my friends I possess a sufficient number of *Aporia Cratægi*, having taken only one myself. One fine July morning I tried Mr. Stainton's recipe, an early walk, and reached Knock Wood not long after the sun had risen (he is no sluggard at that time of year). While preparing my net for work a beautiful *Cratægi* floated gracefully down from its airy height, and alighted on the bloom of a tall thistle, not two yards from where I was standing; the beauty was speedily transferred to my collecting-box. I have never taken another, nor has one been seen, to my knowledge, in this immediate neighbourhood. The species appears to be very local, as my friends inform me that it is abundant in some parts of Kent, not far from Tenterden. What is the cause of this *fastidiousness*, as it seems to us? the food-plants of its larva are surely common enough. How little we know about

the larvæ of many of the *Rhopalocera*! Some, indeed, are too easily found, as the genus *Pieris*, with the exception of the gem *Daplidice*. The larva of *Gonepteryx Rhamni* is not often detected by the casual observer. How beautiful it looks, resting motionless, a semi-pellucid emerald, pendant from a leaf of the delicate *Rhamnus Frangula*! and then to see the quaint crysalis! one wonders why the smooth larva has so distorted itself, until the appearance of the angle-winged imago solves the mystery.—S. C. TRESS BEALE, *Ivy Court, Tenterden*.

*Cynthia Cardui*.—What is the cause of the uncertain appearance of *Cynthia Cardui*? I shall never forget the day when I saw quite a cloud of them, flying about blooming thistles which grew in a gorse plantation. That was a long time ago, when I used *spits* instead of pins, as my specimens, preserved to this day, sadly testify. I have not seen a living *Cardui* since.—ID.

*Vanessa polychloros*.—Of the larvæ of *Vanessa polychloros* I can generally make sure. We have only one small elm in our garden (though a weed in some localities, the tree is a rarity with us), and that elm is sure to produce a good crop of *polychloros* larvæ in June, much to the chagrin of our gardener: they rather astonish him, for perhaps the luxuriance of the tree's foliage is apparently uninjured on the one evening, and on the next the boughs are almost stripped of leaves, and alive with spiny caterpillars. When they commence feeding, they do so in right earnest; for unless their ra-

vages are speedily stopped not a leaf will be left on the tree.—ID.

*Melitæa Athalia*.—I cannot find the larvæ of *Melitæa Athalia*; after carefully searching the food-plants in the locality most frequented by the imago, last summer, I was totally unsuccessful. If in this neighbourhood next May, I purpose "trying again." "Nil desperandum" should be the motto of every entomologist.—ID.

*Cerambyx Heros*.—In reply to Mr. W. Chaney (p. 76), I beg to inform him I captured one of these beetles in H.M. Dockyard, Deptford, on a log of Italian oak, five years ago, and have it now in my possession.—W. H. BRETT, *Deptford*; December 22, 1856.

*On Duplicates and Desiderata*.—Although I do not by any means wish to enter into a paper war with a person who so far forgets himself, in his first letter, as to intimate that an unknown correspondent was "no gentleman," yet I think that the terms he makes use of deserve a comment or two. It is a generally accepted theory that the conduct of the many give the tone to public opinion, and from the various pages of the 'Intelligencer' and the 'Substitute' we may glean so many instances of the absence of that desire to oblige their fellow-labourers which *should* characterize all the knights of the net, that I imagine I can with justice re-echo your correspondent's words, and exclaim that it is *his* expressions that are "unjustifiable and unwarrantable." Again, he appears to think it wrong to request those who give notice of duplicates to state what return they expect (for that was the object of my letter, p. 78), and

yet, in his own epistle, he complies with the suggestion; surely nothing can be more inconsistent than this, as he first complains of, and then agrees with, my epistle. "I have," says he, "carefully looked over the pages of the 'Substitute,' and, with one exception, I observe no offer of insects unless accompanied with a more or less direct intimation that a return is expected." Now an indirect intimation is no use at all, and even if it were, had Mr. Greene extended his search to the 'Intelligencer,' he would there have found numerous notices in which there was not the slightest allusion to a return being required. During a hasty glance which I took over its leaves I found several, and I have no doubt that had I time to make a more careful survey I should find many more. I am perfectly well aware that no entomologist has a right to the insects of another, but I fancy that such a feeling of brotherhood should prevail amongst us as to induce us to make a sacrifice of some little trouble to the wants of fellow-collectors. To put a case in point, suppose that the gentlemen referred to in your correspondent's letter, viz., Messrs. Stainton and Doubleday, had refused him any information; would he not have thought it very hard had they replied, "It has taken us a very long time to elucidate these matters, and why therefore should we impart them to you? Why should we study for years, and spend many anxious hours in solving knotty points and determining doubtful questions, and then give a full explanation (which it has cost us so much to prepare) to

you, who have had no trouble in the matter?" But his own epistle shows that they did not do this; they gave him every help they could, and as they are but two members of a noble band who are always ready to do the same, I must say that those gentlemen who are indebted to the luminaries of the Science should consider it as a debt to be repaid in kind to those of their fellows who may be in want of it. What would become of our pursuit were the world at large to know that the selfish doctrine of "No duplicates no desiderata" reigned paramount amongst us? Why we should fall at once from the sublime to the business-like, and our free intercourse with Nature in all her loveliness (which her votaries enjoy in an unparalled degree) would have no more effect on us than it has on our nets, for we should be calculating, as we capture each successive insect, what would be its value in the entomological market. Would this be no disgrace to us? With this question I shall conclude (not having any particular desire to admire my name in print), by again signing myself—ONE OF THE SUFFERERS; Dec. 23, 1856.

*Death of Pupæ.*—Of five pupæ of *Acherontia Atropos* that I have obtained this year two have died: is it from want of moisture, or from being Ichneumonized? Why do Elephant larvæ, after having spun, instead of changing to a chrysalis, shrivel up and die? I have lost seven this season in that manner.—C. A. A.

[Possibly the pupæ died because they were kept too dry. We should like to hear some opinions on the matter.]



## NEW BOOKS.

DALLAS'S 'ELEMENTS OF ENTOMOLOGY.'

We continue the extracts we commenced at p. 70.

## WATER BEETLES.

"One of the largest, most formidable and most abundant of the British species of this group, is the *Dyticus marginalis*, or Margined Water Beetle, specimens of which may be obtained in almost any piece of water. This insect measures from an inch to an inch and a quarter in length, and is of a broad oval form; the whole upper surface is blackish olive, except the margins of the prothorax, and the outer margins of the elytra, which are of a dull yellow colour, as is also the lower surface of the body. The whole structure of this insect is admirably adapted to its aquatic residence; its thorax is as wide at the base as the elytra, so that its form is a complete oval; its body is thickest in front, and there is not a projection of any kind from its surface to impede its motion through the water. The hind legs form a pair of long, broad and powerful paddles, the surface of which is increased by a fringe of stiff hairs running down the inner margin of the flattened tarsi, and by the action of these the *Dyticus* is enabled to swim through the water at a rapid rate. But although thus fitted for an aquatic life, the beetle is nevertheless under the necessity of rising frequently to the surface for a supply of air, and this operation is effected in a very simple fashion. It is to be borne in mind that the body of the

insect is considerably lighter than water, and that he only keeps himself below the surface by the rowing action of his powerful limbs. Accordingly, when he finds it necessary to breathe, he simply suspends the working of his paddles, when his body gradually rises to the surface, but as the fore part of it is thicker and heavier than the rest, it naturally remains immersed in the water, when his tail is exposed to the air. This is the very arrangement he requires, for his respiration being effected through a pair of stigmata, which are concealed beneath the elytra at the extremity of the abdomen, he has nothing to do after rising to the surface but to raise his elytra a little, take in his fresh cargo of air, and then go off about his business. This consists, for the most part, in the pursuit and slaughter of all his weaker neighbours, which he seizes remorselessly with his fore-feet, and conveys to his mouth with great relish. Anacreon has written one or two odes on the supposed happiness of the *Cicada*, which, if we may judge from the noise made by that insect, must be very great indeed. However, on a careful comparison of the circumstances of the two insects, I can't help thinking that the balance of comfort, at any rate, must be in favour of our friend the water beetle. There he is this awfully hot day, when we, who have walked out to look at him, are in a most miserable state of perspiration,—there he is enjoying the luxury of a cool bath, with every necessary of his existence within easy reach,—his food to be had without any more exertion than just what has been recommended by the wisest men in all ages, to

make it taste the sweeter,—a plunge down into the deep water, snapping up a larva here, a small beetle there, with a little crustacean or two between, or perhaps occasionally dropping down upon a struggling tadpole or young stickleback that has strayed rather too soon from under the paternal eye, his own bulk and strong armour rendering him all the while perfectly indifferent as to the view the other inhabitants of his little world may take of his proceedings. And to make sure of the continuance of this state of felicity, to avoid all chance of our friend finding himself some fine morning floundering about in the mud, with a disagreeably hot sun aggravating the necessary hardship of his being deprived of his bath, Nature has kindly provided him with a pair of ample wings, upon which he can start off at any time to seek his fortune in another place. He generally selects the night for these migrations, and is indeed exceedingly partial to nocturnal excursions in the regions of the air, though for what particular purpose it is impossible to say, unless, as we often observe to be the case in a higher animal, the great ease of his circumstances begets a habit of raking. Certain it is that our friend the *Dyticus* is a most inveterate rake, and his fondness for nocturnal expeditions frequently brings him into trouble; he appears to have an insuperable objection to being seen on the wing, and therefore, as soon as the day begins to break, plunges into the first water he sees, a practice which readily accounts for his being often found in water-butts, or even in

the still more ignominious durance of a puddle. Occasionally also he has been known to mistake the glass of a green-house for water, and by dashing heedless down upon it commit an involuntary suicide.

“The larva of *Dyticus* is as voracious as the perfect insect, but here all resemblance between them ceases. The beetle, as may be gathered from the description given above, is a stout, portly-looking insect, the moderate convexity of his back reminding one of the gentle swell observable in the waistcoat of a well-to-do middle-aged gentleman who has discovered the *summum bonum* of human existence to consist in a good dinner; but the larva, although his actions would seem to indicate his adoption of this view of affairs, certainly does very little credit to his good living. On the contrary, he is a slender, wriggling worm, with a most villanously hungry aspect, thickest about the middle, and tapering off nearly to a point at the tail, and his head is armed with a pair of long sickle-shaped jaws of a most formidable appearance. The upper surface of the segments, especially the anterior ones, is horny; the three first segments of the body are furnished with jointed legs; and the general colour of the creature is a pale dingy brown. The structure of the mandibles is peculiar; they are acute and hollow, and exhibit a small slit close to the tip. The larva, on capturing his prey, which consists principally of other aquatic larvæ, buries his formidable jaws in their bodies, and thus sucks out their juices with very little trouble.”—pp. 75—78.

THE ENTOMOLOGIST'S ANNUAL  
FOR 1857. Van Voorst.

The contents of this volume are enumerated in the advertisement on p. 144. The papers we especially like are 'A Synopsis of the British Dragon Flies,' by Dr. Hagen; 'Observations on the Myrmecophilous Coleoptera or Ants-nest Beetles of Britain,' by E. W. Janson; and 'How Insects Breathe,' by John Lubbock, F.G.S. Dr. Hagen is acknowledged in Germany to be a master in his knowledge of the *Neuroptera*, and this admirable paper will supply a blank in our British entomological literature, and no doubt advance the claims of the dragon flies to be noticed. Mr. Janson's paper is full of matter which will be new to the bulk of English Coleopterists, and will direct attention to a very curious and interesting phase in insect economy. Mr. Lubbock's paper is a laudable endeavour to call attention to physiological Entomology, which is so much neglected in this country: it is written with an evident desire to accomplish this object, and exhibits an admirable conscientiousness in the author. The other papers are all good: the 'Supplementary List of British Entomologists' will astonish a good many by the number of names unknown to fame, and is a pleasing evidence of the numerical increase of collectors of insects. The plate is engraved on steel, and is unusually good, and we observe it is by Mr. E. W. Robinson, a new entomological artist. Altogether this is the best 'Annual' that has appeared, and the issue of the three editions, each at a different price,

will, we hope, induce entomologists of every grade to possess themselves of this record of the progress of their Science in Britain. Δ

## EXTRACTS.

NOTES ON NOCTUÆ: FROM  
GUENÉE'S NOCTUELITES.

[Continued from p. 120.]

*Mamestra*.

The genus *Mamestra*, as Ochsenheimer had created it, could not subsist, because it contained many species which do not differ from ordinary *Hadenæ*. I have therefore employed this name for the present genus, which besides contains several of the *Mamestræ* of the German authors. I have divided it into four groups: the first comprises species of rather large size, of which the abdomen is slightly crested, and which principally inhabit mountainous countries. The second group comprises insects with rounded wings, in which the reniform stigma is marked externally with one or several pale dots; the abdomen is not more crested than in the preceding group. In the third the abdomen is strongly crested in both sexes, and the reniform stigma entirely or almost entirely pale; the lines begin to be more distinct. The larvæ are better known than those of the preceding group. In the fourth group the abdomen is strongly crested, the wings are dentate, and the posterior marked with a dark border (this fourth group consists only of species from

New Holland). The larvæ of *Mamestra* are a little less vermiform than those of the rest of the family: their spots do not form well-developed shining warts, and their colours are generally not so dull; the greater part also live generally less concealed; several species are known as destructive, especially *Brassica*, which does not confine its ravages to our cabbages, but shares with *Triphena pronuba* a part of our kitchen-garden plants. Its injuries are very perceptible to our gardeners, because continued during a portion of the winter, and at a time when vegetable life becomes precious. In order to get rid of the larvæ, remedies have been recommended worse than the evil, and besides hardly practicable, such as powdering the plants with lime, or washing them with liquid prepared with soot or tobacco, &c. Independently of the expense and considerable amount of manual labour which the use of these remedies would require, besides the injury to the plants themselves and affecting their flavour, they have not even the merit of attaining their object, for certain parts of the plant always remain untouched, and the caterpillars are always skilful enough to select such; besides even the parts thus operated upon do not always repel the attacks of the larvæ: and even if we did succeed in driving them away, they would spread over the neighbouring plants, for, as I have just said, they are polyphagous, and one cannot, in fact, doctor an entire garden.

On the other hand, these caterpillars do not live in society, even when they are young, and do not

testify their presence by webs or agglomerations of leaves; so that to get rid of them one is obliged to kill those we meet with, one by one and day by day, that is to say, only the half of those which exist, for a great number easily succeed in escaping the most continuous research.

Hence it results that the destruction of the *Mamestra* is almost impossible, and, except in those cases where their ravages are almost alarming, and justify the employment of a special manipulation, we are obliged to have recourse for their extermination to enemies more patient than ourselves, especially to Nature, which suddenly arrests their multiplication by atmospheric influences or by other means which we cannot explain.

In the perfect state the *Mamestra*, in their manners, do not differ from the general run of *Noctua*. Their exterior organization presents nothing particular; their colours are generally rather insignificant, although their markings are neatly expressed.—Vol. I. pp. 188, 189.

### *Apamea*.

This is a genus which, though adopted by all authors, has yet been considerably varied as to the species it should contain. In my 'Index' I restricted it considerably, and I still maintain it so, only adding *basilinea* and *connexa*, which experience has proved to me to be true *Apamea*.

The larvæ of these insects have many points of relation with those of *Xylophasia* or *Luperina*. They are short, stiff, with the skin thick and shining, with the horny plates well developed, and generally of

gray or dull colours. They live principally upon the *Gramineæ* or allied families, of which they eat the lower leaves or roots. They carefully conceal themselves during the day, and even retire into the stubble or cut stems, which has led to the belief that some of them were endophagous, but it is certain that, as in the case of some of the *Leucaniæ*, they merely seek a shelter there, and do not eat the inner substance. Besides, they never change to a chrysalis in the stem, and never construct private openings.

The larva of *basilinea* specially attacks our cereals, and sometimes multiplies so as to occasion real havoc. The larva is developed in the ear of the wheat, and passes there all its youth and even a part of its adult age: it is hatched in little families on a single ear, and the young larvæ pierce the grains to feed on the farina, which at that period already commences to solidify. I have before me several ears thus attacked, of which all the substance has been eaten, although the covering of the grain and "les balles" have remained untouched, excepting the little opening which has served to empty them. When the larva is too large to be contained in the grain, it thrusts itself between "les balles" or the beards of the ear, and is then with difficulty distinguished, for it is nearly of the same colour. Now comes the period of harvest: the larva is then collected in the sheaf, and if we examine the floor of a barn at thrashing-time, we see the larvæ, driven from their retreat by the blows, walking about by the dozen. The time, however, is come when their power of doing mischief is

over: the grains become hard, and the cold of winter soon benumbs the larvæ, which shelter themselves in summarily constructed cocoons, in order to pass the winter. As soon as spring arrives they change their manner of living, and only attack roots or the lowermost leaves: they then increase in size, though very slowly, and it is only then that they assume the livery of *Apameæ*, for previously one would take them for *Leucaniæ* or young *Dianthaciæ*, so true it is that the habits of the larvæ exercise a powerful influence on their forms and colours. In the month of March they bury themselves in the earth to change to chrysalides. I have dwelt at some length upon the history of *Apamea basilinea*, which, in the larva state, is little known, and which must, as we see, be counted amongst the number of enemies to our cereals.

The perfect insects of this genus are of moderate size, dull colours and with tolerably sharp markings: the stigmata are very distinct, often white or yellow, and the terminal pæce behind the subterminal line, which is always more or less evident, forms a dark patch, often divided into two dark spots. These *Noctuæ* are particularly lively, and they fly at dusk with great ardour. —Vol. I. pp. 204, 205.

[To be continued.]

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How Insects Breathe. By John Lubbock, F.G.S.

Entomological Works published in England in 1856. By the Editor.

Entomological Works published Abroad in 1856. By the Editor.

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**THE ENTOMOLOGISTS**  
**WEEKLY INTELLIGENCER.** PRICE ONE PENNY.

To be continued weekly during the summer months (that is, till the end of September), for the purpose of instantaneous transmission, amongst the Entomologists of this country, of all important Entomological information.

Those who make any discoveries or captures of importance are requested to communicate at once to the Editor (Mr. H. T. STAINTON), and all authenticated intelligence received by him prior to the Wednesday will be published in the 'Intelligencer' of the following Saturday.

Those who wish the 'Intelligencer' forwarded by post on the day of publication are requested to transmit 4s. 6d. in postage stamps to E. NEWMAN, 9, Devonshire Street, Bishopsgate Street, on or before March 20, 1857.

Will be published every Saturday by E. NEWMAN, 9, Devonshire Street, Bishopsgate Street, and by W. KENT and Co., 51, 52, Paternoster Row; and may be had of all Booksellers and Newsmen.

Printed and published by EDWARD NEWMAN, Printer, of No. 9, Devonshire Street, Bishopsgate Without, London, in the county of Middlesex.—Saturday, February 14, 1857.

# THE SUBSTITUTE;

Or, Entomological Exchange Facilitator, and  
Entomologist's Fire-side Companion.

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No. 14.]

SATURDAY, JANUARY 24, 1857.

[PRICE 2d.]

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## LOCAL ASSOCIATIONS.

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It is scarcely possible to draw up a list of the insects of a district without the co-operation of several persons, for some species are so scarce that they fall to the lot of few, and others are so local that one only out of many collectors in a place may know of their existence. If, then, neighbouring collectors remain isolated they are mutually impoverished both in specimens and knowledge, whereas if they were united together there would be a corresponding benefit to each of them. It is true they might impart their information to each other without being formally associated into a Society, but the stimulus of *esprit du corps*, which is a main element in the composition and success of all Societies, would be wanting. It is not necessary that a local association should possess a collection of insects, which, as experience has proved to large Societies, is only an encumbrance, but it might well manage to have a selection of standard books.

Scientific books are expensive things, and beyond the reach of most individuals; but a very serviceable library might be procured by the united subscriptions of a few persons. Probably one of the members could give the books house-room; but for many reasons the meetings of the Society had better be held at the homes of the members in rotation. In few places would there be enough entomologists to constitute a "Society" proper; generally "Club" would be a more appropriate designation. The rules of the Club should be few and simple, it being understood as a *sine qua non* that every member will so behave as not to make himself disagreeable to others—very trite and old-fashioned advice, but unfortunately not the less necessary. Associations of earnest and unselfish men would not only be able to investigate the Entomology of certain districts, and discover what species they possess, but they would establish data with respect to the distribution of species, and increase the qualifications of the members as scientific

the circumstance or captured the insect, some friend who could appreciate its value might have been supplied with a new fact in insect-history or a new species. This sort of opportunity, we fancy, often happens, for a hunter after one Order or Division of insects frequents localities little or never visited by the collector of other insects, and so meets with rarities which he neither knows nor esteems. Of course it would be better that all collectors should have so much general knowledge as, without distracting their attention from specialities, would enable them to distinguish a fact or an insect if out of the common way; but this is scarcely to be hoped for, and yet we are persuaded that many a bit of knowledge and many a good species may be picked up in a desultory way if collectors will keep their eyes and their hearts open. We once knew a collector of almost all Orders except *Lepidoptera*, but in the course of his wanderings he had casually pinned a dozen or two of small moths, and the majority of these, upon examination by a competent person, proved to be great rarities. We have all read in last year's 'Annual' how *Trochilium Chrysidiforme*, *rarisima avis*, was swept up by a Coleopterist who did not know it nor want it, and yet did *not* throw it

away. Other similar instances are not wanting. But on the other hand, how many *Coleoptera* have been turned up by diggers for the pupæ of *Lepidoptera*? how many rare beetles have come to the sugar baits of moth-catchers? how many pupæ of *Lepidoptera* have been found by hunters for beetles in moss? how many parasites have been reared from *Lepidopterous* larvæ? and all lost to the respective parties they would have delighted and benefited.

Captain Cox recently alluded to the mutual advantage entomologists are to each other, and has mentioned some of the above subjects. We agree that to a certain extent entomologists do assist each other, but we wish to see the desire to benefit others in the way we have mentioned become more general, and we think well enough of the brotherhood to believe that a great many only require to have their attention called to the matter for them to practise it.

There will be exceptions, no doubt—there are to the best of causes. Well, let Diogenes have his tub to himself, and let us not forget to stand out of his sunshine: with other and better natures we may cultivate the *entente cordiale*, encouraged thereto, if need be, by knowing that it will be quite as much for our own benefit as theirs.



## TO CORRESPONDENTS.

*All communications to be authenticated by the name of the writer, and to be addressed TO THE EDITOR OF 'THE SUBSTITUTE,' 9, DEVONSHIRE STREET, BISHOPSGATE STREET, LONDON, N.E.*

B. B.—We cannot answer your question positively, but we believe *all* cedar wood is liable to the same objection.

G. G.—Your application is under consideration.

## COMMUNICATIONS.

*Exchanges with Foreign Entomologists.*—[We have had handed to us the following extract from a letter from M. E. Fologne, of Brussels. We are happy in thinking that we have been the means of inducing a correspondence with this gentleman, and hope that such communications may become more frequent between British entomologists and their continental brethren.]—"I beg to thank you for the service you have rendered me by inserting my letter in 'The Substitute,' I am now in communication with several entomologists in different parts of England, and I have already enriched my collection with several species. I have even received so many offers of Lepidoptera in exchange that I am unable at present to satisfy all demands."

*The Testimonial to the Rev. J. Greene.*—Sir,—When it is pro-

posed to confer honour upon any person not wholly undeserving of it, the "ayes" are pretty sure to carry the day; for if there be any who dissent from the proposition, the feeling that it would be ungracious to appear to detract from acknowledged merit generally stops their mouths. Now, sir, one of the features which characterise the present state of society is a rage for testimonials. Any one who has been supposed to do his duty, or to confer benefit on a greater or less portion of his fellow-creatures, must needs be presented with a testimonial. Even were this literally the case,—were the most deserving men always selected,—will you allow me to suggest that the principle is an utterly wrong one? It is part and parcel of that system of doing good, and being good, *for the sake of reward*, which is the bane of so much of our secular and theological teaching now-a-days. And yet virtue, in whatever line, is surely its own best reward. Surely no testimonial ever conveyed a pleasure equal to the conscious pride of having done good and helped others, and being indebted to no man. There are many periods in a man's life in which he has good reason to exclaim, "Save me from my friends!" Those who get up testimonials on every possible occasion little think how they often give real pain to those whom they delight to honour. The feeling that the proposition is inappropriate,—one's own merit really undeserving of such pre-eminent recognition,—on the one side, and the fear of being ungracious or unkind on the other, are anything but agreeable to a sensitive mind.

I do not entirely depreciate the custom of testimonials: in certain cases they are right and proper. But is the present case one in point? Here is a patient and accurate naturalist who has specially turned his attention to a much neglected method of collecting insects: he has thus obtained many rarities, and splendid specimens for his own cabinet: his liberality in distributing his duplicates has gained him the good word of every entomologist. He has also done what every one ought to do under similar circumstances; he has published a full description of his *modus operandi*. By this, no doubt, hundreds of collectors will make great profit; what special benefit will accrue to Science remains to be seen. Now, has not this gentleman's discovery been its own reward? He has the satisfaction of knowing that he has helped others. Why alloy that satisfaction with anything that can diminish the feeling of independence, or impose that of obligation? And again, how does his case differ from those who have of late years originated the various "dodges" of *sugar, sallow and ivy blossoms, street lamps*, and the many other new methods of taking insects? Why should *pupa-digging* be specially honoured above all these. But surely, sir, testimonials in connection with scientific objects should be given, at all events, *first* of all to those who have materially aided the progress of *scientific truth*; to those whose labours have added the most to our acquaintance with the real domestic history of the various works of Creation. One could easily men-

tion many such names; but they are quiet, unobtrusive ones; hardly thought of by "the many" who care little for science and the common good, but much for what immediately affects their own individual interests. Suffer me to add that I have not the slightest acquaintance of any kind with any persons to whom I have alluded. I fear I may have trodden on many a "corn:" if so, I humbly beg pardon of the possessors of those uncomfortable excrescences.—REV. P. H. NEWNHAM, *Woodbridge Road, Guildford*.

*The Fund for the Family of the late Mr. Hemmings.*—I am much concerned at the death of our friend J. Hemmings, but being a poor man I can only assist the fund for his family in this way: I have six pairs of *Speranza conspicuaria* which I took at Raydon Wood, and which I will sell for 2s. 6d. per pair, 6d. to be sent to me for postage, and 2s. to the committee.—GEORGE KING (of Ipswich), *Priory House, Weymouth*; February 13, 1857.

*Diphthera Orion.*—In 1853 I took about 120 of this moth at sugar in a wood near Ipswich, and noticed always that they rarely came until between ten and twelve o'clock, and that they were more abundant when the nights were dark and windy: once I got twenty-seven and once twenty-five, but on unfavourable nights not one. They never fed for any length of time, were very shy, and were easily disturbed by the light of my lantern.—ID.

*The Case of Egger versus Hornet.*—A few years since I found a cocoon; size about that of the Small Egger; shape almost a

parallelogram; consistence rather thin, but tough; colour purplish chocolate; time, early spring; situation in a damp meadow, near Harleston, Norfolk, on the foot of a stunted willow where the ground had parted from the tree: I cut it off (*i.e.* the cocoon) and put it into a breeding-cage. The query is, what came out of it? I say a hornet, as I found one in the breeding-cage one morning, evidently just out from somewhere, and I then found the cocoon open and nothing in it; there was no moth that could have come out of that cocoon in the cage that morning (I used to examine the cage every morning). I sent the hornet to Mr. Wailes, of Newcastle; he has pronounced it a female, but said he never knew or heard of a hornet making a cocoon and laying up in it, and thinks there must be some mistake, and Mr. Unwin seems to think so too; but not feeling satisfied about that I make it public in the hope that some light may be thrown upon it. — J. J. REEVE, *Newhaven, Sussex; February 3, 1857.*

*Rev. J. Greene's Essay.* — I should like most respectfully to suggest that if the Rev. J. Greene would publish his excellent Instructions for Pupa Hunting in a separate and cheap form (say 3d.), it would be a great boon to many, who will otherwise never see them, and think many would buy them in that form, who either have already read them or have them by them, and the more especially if the best methods of preserving the pupæ were added. — I.D.

*Cynthia Cardui.* — I have been waiting since January 10th last

(No. 12 of 'Substitute') in the hope of seeing a reply to the query of S. C. T. Beale, Esq., as to the uncertain appearance of this pretty butterfly. Some few years ago I met with a large number of them at one time, of which I sent an account to 'The Naturalist,' but have not seen one since. — JOHN GARLAND, F.L.S., &c., *Dorchester; February 7, 1857.*

*The "Burning Cliff," Dorsetshire.* — I have noticed on one or two occasions (*vide* 'Manual' for instance, Art. *Actæon*) the terms "Burning Cliff" and "Lulworth Cove" applied somewhat indiscriminately to *Actæon's locale*, as if synonymous for one and the same place. Will you kindly allow me to rectify (I should rather say explain) this slight error, as I think it may mislead strangers? The "Cliff" and the "Cove" are two distinct places, both situated along the coast, but the "Cliff" five miles nearer Weymouth than the "Cove." Though I have often made entomological excursions to Lulworth (and it is an excellent locality for many species) I have never met with one *Actæon* there; indeed, I fancied they had quite deserted their "first love," until I saw from a communication in 'The Substitute' (page 19) that they had reappeared there. At the "Burning Cliff," however, which is, without doubt, their "Metropolis," they revel in hundreds, and I advise any entomologist who *wants Actæon* and *does not mind* tumbles over a "humpy" undercliff, to seek them there. I mention this as I know that several entomologists, who come for the express purpose of procuring the insect,

go away disappointed at their want of success, and this because the name of the insect directs them to Lulworth instead of to the

"Burning Cliff" where, no doubt, they would find it in plenty.—A. PRETOR, *Harrow; February 12, 1857.*

Sir,—I am surprised at your publishing those lines, I will not call them verses, about the Hemiptera; they are as dull as the ditches where your correspondent finds his *Nepina*, which, to say truth, are not worth writing about. Imitation forsooth! Where is the preamble, the peroration? Where the prologue and epilogue in which I so gracefully introduced the infant daughter of the Douglas? a delicate compliment he will not forget when he is naming his novelties, for I sent him my card, in strict confidence, with a copy of the verses. Here are some more verses, a large batch; and I hope you will certify my entire repudiation of the Hemiptera nonsense.

#### THE HYMENOPTERA DESCRIBED.

Child of Douglas, Pauline Zeller,  
Youngest daughter of the poet,  
He who writ 'The World of Insects,'  
Writ in prose a pleasant poem,  
Let me tell thee of the sawflies,  
Of the gallflies and ichneumons,  
Of the rubywasps and sandwasps,  
Of the bees and wasps and pismires,  
As I told thy sister Laura,  
All about the tribes of beetles.

In describing all the inas  
Of these four-winged, clear-winged insects,  
I must tell you of their larvæ,  
Where they live and what they feed on.

First a tribe of caterpillars,  
As of butterflies and nightmoths,  
Living in the woods and hedges,  
On the juicy green leaves feeding,  
And resembling, too, the larvæ  
Of the butterflies and nightmoths  
In the art of spinning cases,  
Inside which they change to pupæ.  
When the sawfly—these are sawflies—  
When the sawfly once emerges  
From these silken gluey cases,  
And you look at its antennæ  
For some mark whereby to know it,

You will fail, they are so varied ;  
 Some are knobbed, and some are threadlike,  
 Some are forked, and some are fanlike :  
 All have four wings, clear and glittering,  
 And a thick and fleshy body,  
 Uniform throughout in thickness,  
 Not nipped in and spindle-waisted,  
 Like a wasp or like a spider :  
 They have all the feet five-jointed,  
 Fore shanks, two-spurred at the summit ;  
 One sex only bears a weapon  
 Near the tail, beneath the body,  
 Sharply notched and very saw-like,  
 And with this she quickly pierces  
 A young leaf or juicy sucker,  
 And her eggs sedately places  
 In the wound she has created ;  
 From this saw we call them sawflies,  
 Sawflies or TENTHREDININA.

Next a tribe with footless larvæ,  
 White, and fat, and stupid maggots,  
 On the solid timber feeding,  
 Burrowing deep into its substance,  
 Leaving galleries behind them :  
 They have long and thin antennæ,  
 Gently tapering to the summit,  
 Wings transparent, and loud humming,  
 Fore shanks one-spurred at the summit,  
 And the feet are all five-jointed ;  
 Body uniformly rounded,  
 Not nipped in and slender-waisted,  
 And the tail is like an augur,  
 Formed for boring into timber ;  
 If you ask me wherefore boring,  
 What its use and what its object,  
 I should quickly give this reason,  
 That the fly may safe deposit  
 Eggs in every excavation,  
 Eggs from which the infant larvæ  
 Soon emerging bore still deeper,  
 Deeper still into the timber :  
 Let us call them SIBICINA.

All the oakapples and inkgalls,  
 All the cherrygalls and nutgalls,  
 All the bitter Dead Sea apples,  
 All the beautiful oakspangles,

## THE SUBSTITUTE.

And those freaks of sportive nature,  
 Called by children wild mossroses,  
 Found in summer in the hedgerows,  
 All these and a hundred others  
 Quite as strange, and some far stranger,  
 Are the work of puny insects,  
 That we always call the gallflies,  
 Or in Science CYNIPSINA.  
 These most wonderful formations  
 Nurseries of gallfly larvæ,  
 Little white and footless maggots,  
 Are not built by skill instinctive  
 Of the quiet penned-up inmate,  
 Or its winged and wandering parent;  
 But are merely strange distortions,  
 Caused by buoyant sap diverted  
 From the true and proper channels;  
 Yet how uniformly fashioned!  
 How alike in size and figure  
 Those each kind of fly produces!  
 How unlike to every other!  
 All the gallflies are small insects,  
 With antennæ very simple,  
 And with bodies flattened sideways,  
 And divided in the middle  
 Into nearly equal portions,  
 Called the abdomen and thorax;  
 And the female has a borer—  
 Almost all gallflies are female—  
 With which instrument she pierces  
 Leaves or tiny twiglike branches,  
 Laying eggs within the fissure;  
 The clear wings are almost rayless,  
 And her feet are all five-jointed.

Next to gallflies come ichneumons,  
 Insect-parasites we call them,  
 For the grubs or footless maggots,  
 From which come the fly ichneumons,  
 Live concealed within the bodies  
 Of all other kinds of insects,  
 But in caterpillars chiefly  
 Of the butterflies and nightmoths:  
 On the living flesh they fatten.  
 When the time arrives for changing,  
 When the butterfly should issue  
 From its still and death-like pupa,  
 Then from out that shrouded coffin

Comes the parasite ichneumon,  
 With its long antennæ quiv'ring,  
 With its wings all bright and shiv'ring,  
 Quite transparent, often tinted  
 Like the evanescent rainbow :  
 They are insects slender-waisted,  
 And their tail is armed with bristles,  
 Three long, sharp, and piercing bristles,  
 Which they plunge into their victims,  
 And then leave an egg within them :  
 Most of them have feet five-jointed,  
 But a few, minute and burnished,  
 Like winged gems so bright their colours,  
 Have the feet four and three-jointed.  
 All the tribe we call ichneumons,  
 Parasites, ICHNEUMONINA.

Next the rubywasps invite us,  
 Clad in mail of gorgeous colours ;  
 Blue and green, carmine and purple,  
 Gliding over walls or palings ;  
 Who is there that has not watched them,  
 As with vibrating antennæ  
 They inspect each crack and cranny,  
 Seeking out the nests of wallwasps,  
 Masonbees, or bees that build in  
 Posts or mortared walls, or sandbanks,  
 Forming there the cosy dwellings,  
 Dwellings for their future young ones ?  
 When these dwellings she discovers  
 The sly rubywasp deposits  
 All her eggs among the larvæ,  
 With a weapon telescopic-  
 Fashioned, joint in joint retractile,  
 And her young, when hatched, devour up  
 All the food that was provided  
 For the young of bees and wallwasps :  
 Let us call them CHRYSIDINA,  
 Rubywasps, or Chrysidina.  
 Their antennæ short and elbowed,  
 Their wings clear and almost rayless,  
 Their feet always are five-jointed,  
 Their waist is almost divided,  
 But the two parts are united  
 By a very short peduncle.

Next these come the stinging insects,  
 Bees and wasps, sandwasps and pismires.

## THE SUBSTITUTE.

First of these the bees, *APINA*,  
 Called by authors *Anthophila*,  
 Or in English flower-lovers,  
 For they fly among the flowers,  
 Revelling, rifling all their sweetness,  
 Gathering pollen, sucking nectar,  
 Changing these to wax and honey,  
 Building cells with skilful neatness,  
 Waxed cells, and all six-sided,  
 Waxed cells to hold their young ones.  
 Many live in crowded cities,  
 Many thousands in a city,  
 Like a kingdom or a queendom,  
 Female Sovereign, drones and workers.  
 Their antennæ stout and elbowed,  
 Fore wings flat and never folded,  
 Hind shanks flattened out and bristly,  
 Formed for carrying loads of pollen,  
 Feet as in the rest five-jointed,  
 Body joined by a peduncle,  
 Armed with sting acutely stinging.

Next the bees, the wasps, *VESPINA*,  
 Make the cells but not the honey,  
 Build with skill their spacious mansions,  
 Build their cells and combs with paper,  
 Paper of the finest texture,  
 Paper also manufactured  
 By these energetic workmen.  
 In these buildings, in these mansions,  
 Wasps will multiply by thousands,  
 Sovereign queen, and drones, and workers.  
 Their antennæ somewhat elbowed,  
 Each fore wing is folded lengthwise,  
 Body joined by a peduncle,  
 And their tail is always furnished  
 With a sting of fearful power;  
 Their hind shanks are plain and simple,  
 Formed not for collecting pollen,  
 And their feet are all five-jointed.  
 Such, in brief, are the *Vespina*,  
 Black and yellow wasps, *Vespina*.

Sandwasps follow next in order,  
 Sandwasps, fossors or *SPHECINA*,  
 Insects that delight to burrow  
 In the soft and crumbling sandbanks,  
 Making little excavations



For their maggot young to live in.  
Sandwasps do not live in cities,  
But in solitude so cheerless,  
And away from all companions:  
You may see them in the meadows  
Catching flies, and even spiders—  
Justice vengeful, but poetic—  
And the Cimicina, bugflies;\*  
These they numb with subtle poison,  
That deprives them of all motion,  
Yet seems scarcely to be fatal,  
So long they retain their freshness:  
Thus numbed, they poor things are carried  
By the predatory sandwasps,  
And safe stowed within their burrows,  
For the maggot young to feed on.  
Their antennæ always elbowed,  
Rather short and almost simple,  
Fore wings flat and never folded,  
Fore legs armed with spines for digging,  
Hind legs also spined, for lifting  
All the spiders, flies, and bugflies,  
That they carry to their burrows.  
Body nipped in at the middle,  
The waist thin and often threadlike.  
Such are sandwasps, or Sphecina,  
Sandwasps, woodwasps, or Sphecina.

Watch the ant, thou little maiden!  
Mark her labours and learn wisdom!  
Need I tell thee, need I show thee,  
How she plies her ceaseless duty,  
How she excavates her dwellings,  
How she feeds her helpless offspring,  
How she tends them, how she loves them,  
How, in sunshine bright, she suns them,  
How she moves them when in danger,  
From a foe or passing shower,  
How she keeps the stolid plantlice,  
That her young may sip their honey?  
Watch the ant, thou gentle maiden!  
Mark her wise ways, and learn wisdom!  
Note her subterranean cities,  
Where the streets are thronged with passers,  
Where the kings and queens, and workers,  
All intent upon their duty,  
Meet in galleries and pathways,

\* Protesting against the altered name.

Kings and queens with wings in autumn,  
 Workers, always working, wingless :  
 All have their antennæ elbowed,  
 All are nipped in or thin-waisted ;  
 Queen and workers, too, are furnished  
 With a sting so small and pungent ;  
 All have feet that are five-jointed.  
 Everybody knows the pismires,  
 Pismires, ants, or FORMICINA :  
 Watch them work, thou little maiden !  
 Mark their wise ways and learn wisdom !

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 be published No. 27 (the first  
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 shire Street, Bishopsgate Street,  
 N.E., on or before March 20, 1857.

Will be published every Satur-  
 day by E. NEWMAN, 9, Devonshire  
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 MAN, Printer, of No. 9, Devonshire  
 Street, Bishopsgate Without, London,  
 in the county of Middlesex.—Saturday,  
 February 28, 1857.

# THE SUBSTITUTE;

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No. 20.]

SATURDAY, MARCH 7, 1857.

[PRICE 2d.]

## FINIS.

THE 'Substitute' had its origin in the wish expressed by many of the readers of the 'Intelligencer,' that there should be a winter journal containing Lists of Duplicates and Desiderata, Notices of Summer Rambles, &c.; in fact, in the phraseology of the play-bills, we appeared "by particular desire." We have no reason to complain of a want of support, as far as contributions to our pages are concerned, though we confess we should have liked a larger audience, and we now propose to give a retrospective glance at our volume. First, we will take the lists of

### DUPLICATES AND DESIDERATA.

These have been numerous and copious, and on the whole, we believe, have been satisfactory. Some persons have been disappointed in not obtaining the insects they expected, and one correspondent vented his indignation in no measured terms, but we have reason to think that the majority of those who have used

our columns are satisfied with their exchanges, and have obtained many species that they would not otherwise have possessed. We are satisfied with knowing that we have been the means of intercommunication between collectors, who, but for our paper, would have remained isolated. Why it is we know not, but nearly all the lists came from Lepidopterists.

Under the head of

### CAPTURES

we have recorded more than we expected; in some instances great rarities, and in one a new British species—*Leucania vitellina*.

### COMMUNICATIONS.

These form the most bulky and numerous portion of the contributions of our correspondents, and besides "Notices of Summer Rambles," embrace a wide range of subjects. These papers are of very unequal value, as might have been expected. Some have been sneered at for having little in them, but the critics forgot that every one does not know so much as themselves, and that there is

a race of learners to whom the experience of other learners is valuable, especially when those who are their seniors, and might teach them more and better, disdained to instruct them through the medium of our pages. It will, however, be consolatory to some of our young contributors to know that their communications, void though they may be of novelty, on account of the freshness and thorough heartiness exhibited, have received the commendation of entomologists, whose position, ability and power of appreciation are unquestioned. We are, therefore, pleased that we have given these young aspirants the opportunity of appearing in print; and trust that the expectations of better things that we have from some of them may one day be realised. There are other communications that need no apology.

The section of

#### EXTRACTS

contains, among other good matter, copious quotations from Guenée's great work on the *Noctuidæ*, about which we need say nothing, for they have been received with unqualified approval by all.

And now it only remains for us to say a word about the editorial articles. In these we have endeavoured to raise the tone of

thought among collectors, and to lead them to look at Entomology with reference to its science and general principles. Now and then we turned to practical matters, and on one subject, "The Cabinet Question," the communications we received and printed induce us to think that it will be the fault of entomologists themselves if they are ever again victimised in respect of cabinets.

Once or twice there happened to be an infinitesimal excess of gall in the ink, as we found afterwards by the wincing of certain individuals, though we can affirm that we aimed rather at things than persons. They complained of our abuse of them, but though, like Quixote, we tilted at their windmill, we knew not the owner. If we had, as they wished, printed their communications in reply, there would have been a revelation of what abuse really is, and showered out as it was upon several heads, would have thrown our words into shade, and subjected the writers, and probably ourselves, to action for libel.

And now our melodrama is ended; we make our bow and retire, thanking those good friends who have assisted us, and hoping and believing that we have been useful in keeping alive during the "winter of our discontent" the embers, which will now need no sti-

mulus to make them resume their wonted heat,—in other words, that we have not failed in our object,—“to feed the flame.”

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#### TO CORRESPONDENTS.

*We have handed all the unpublished contributions to MR. STAIN-TON to deal with as he thinks fit.*

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#### DUPLICATES AND DESIDERATA.

A young friend of mine in Ireland has entrusted to my charge about twenty-five pairs of *Anthrocera Minos*, unset. Being quite a young entomologist, and at the same time unacquainted with English collectors, he has requested me to offer them in exchange for other Lepidoptera. Any gentleman, desirous of obtaining a pair of *Minos*, will be good enough to write to me in the first instance, stating what and how many specimens he is willing to send in return. The insects must be in good condition, and rarity will not be so much esteemed as quantity.—REV. J. GREENE, Playford, Ipswich.

[We regret that we have not room for the list of the species possessed by the offerer of *Minos*, which accompanied this notice; it contains twenty-five species of *Rhopalocera*, eight of *Heterocera*, twenty-four of *Bombyces*, ninety-four of *Noctuæ*, five of *Pyrales*, and fifty *Geometræ*. The majority of the species are not rare, and we expect there are plenty of

persons who will take the trouble of writing out a list of species which they have to give for *Minos*].

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#### COMMUNICATIONS.

*What's his name?*—Some thirty years ago Old Matthews told a good story of and mimicked, as only he could, a German cook, whose “tender sensibilities” allowed him to skin living eels without compunction, though his kitchen apron was up to his eyes in a moment at “the Sorrows of Charlotte and Werter,” lamenting, that as “he could not get dem in de German language, he must read dem in de English tong,” and now a Liverpool Cooke laments his ignorance of the “language,” and calls on me to put the German into English. Well, he may take the literal translation, “a stripped off and dressed animal’s skin,” or the shorter one, “a tanned hide,” or shorter still, “leather,” whichever he prefers. The poetic is too long a story, and might prove quite as mysterious to him and his friends as it stands in German, and they must just consult some classical dictionary, and under “Amalthea,” will find the tale, and perhaps comprehend it and its application, especially if they bear in mind the specific name first given by Gmelin to the insect which represents the genus in Britain.—PROH PUDOR.

*The Murder of the Innocents.*—I thank you for your leader in the last ‘Substitute,’ and sincerely hope that it may have some effect on the ravagers. I might have

mentioned 1000 *Adonis*, or thereabouts, as well as the 500 *Cinxia* and 2000 *Corydon*, in my letter to which you refer. What would Venus say to this? Such a man deserves to be single all his life.—  
REV. E. HORTON, *Wick, Worcester, February 14, 1857.*

*Pupæ in Hedge-rows.*—After reading the remarks on pupa-digging, by the Rev. J. Greene, I was determined to try my fortune at it, so I procured a garden-trowel and started on my digging expedition, on Saturday last, to Chingford, in Essex. I confined my operations to hedge-rows, believing pupæ were to be found there. I dug for half an hour without any success, but I went on, and presently what should turn up but *Chærocampa Porcellus*. Inspired by this good fortune I still persevered, and after I had been digging for one hour I found, on looking in my pupæ-box, the following:—

*Chærocampa Porcellus*, 2

" *Elpenor*, 3

*Sphinx Ligustri*, 3

*Smerinthus Tiliæ*, 2

and several others, of whose names I am not quite certain, thus showing hedge-rows are not to be condemned entirely.—W. H. LATCHFORD, 1, *Plumber's Place, Clerkenwell; February 16, 1857.*

### NEW BOOKS.

THE TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, Vol. IV. Part 2, 1856, with one plate, price 2s. Part 3, 1857, with three plates, price 3s. Longman & Co.

MONOGRAPH OF THE GENUS *CATOPUS*. By ANDREW MURRAY, Member of the Royal Physical Society of Edinburgh; of the Entomological Society of France; of the Entomological Society of Stettin, &c. (Reprinted from the *Annals and Magazine of Natural History* for 1856.)

The papers in the above two parts of the 'Transactions' that are of interest to the majority of English entomologists are—

I. One in Part 2, intituled "How may the Onward Progress of the Study of Entomology be best furthered?" By H. T. Stainton, Esq. The author thus sums up: "The substance of the deductions arrived at, in the progress of this enquiry, is as follows:

1. "Let each student of Entomology restrict himself to some limited field of investigation."

2. "Let each make known the object of his peculiar predilections, and encourage general observers to communicate to him any facts bearing upon it."

3. "Let each, as soon as he has acquired and digested a sufficient amount of knowledge, publish it in an intelligible form, not restricting himself solely to details, but wherever opportunities occur, generalising the subject as much as the extent of his knowledge will permit."

This is good, but we would add a caution against making general deductions from a limited field of observation. Most of the errors in systematic writing arise from this cause; things appear to be generally true, and possibly are so, within a certain range, and yet

when viewed through the medium of a wider experience and larger intelligence, are seen not to have the significance of general principles. Indeed, it seems to us that it would be well for entomologists if, with reference to generalisation, they had the advantage of an acquaintance with other divisions of the Animal Kingdom than the Insecta; to say nothing of the desirability of their knowledge being extended to more than one order of insects. To attempt to systematize without facts gathered over a wide expanse seems to us as illogical as to try to build a castle upon the foundation and with the materials of a cottage.

II. Two papers in Part 3, respectively intitled, "Notes on the Wing-Veins of Insects, by J. O. Westwood, Esq., F.L.S." and "A Revision of the British *Atomariæ*; with Observations on the Genus, by T. Vernon Wollaston, Esq., M.A., F.L.S." Mr. Westwood's paper is intended as a reply to one by Mr. Newman, published in a former part of the 'Transactions,' in which this author contended that the rays of an insect's wing perform precisely the same functions as the bones of a bat's wing, and that the wing of a butterfly is the exact analogue of the wing of a bat: Mr. Westwood adduces no experiments of his own, but contends from the observations of others that Mr. Newman's theory is not true, and that the wing-rays are essentially veins. We do not think, however, that the question is settled, and we hope some of our microscopists will devote their attention to it.

Mr. Wollaston's "Revision of

the British *Atomariæ*," referring, as it does, to a difficult and neglected genus of Coleoptera, is especially valuable. It is no figure of speech to say that the species of the genus, as they appear in Stephens' 'Manual,' are a perfect chaos, and the difficulty of making them out was increased rather than diminished by a reference to that author's collection, where sometimes four or five species were mixed under one name, and sometimes one species had five or six names. We are all, therefore, under great obligations to the author of 'Insecta Maderensia' for unravelling these mysteries, which he has done in his usual masterly manner. We quote the following remarks from the introduction to the paper.

"The confusion which has unfortunately arisen through the inaccurate identification of the late Mr. Stephens, whose collection (now in the British Museum) must moreover be regarded as the sole interpreter of his very meagre and unsatisfactory diagnoses, has rendered the task a somewhat tedious one; nevertheless, a careful collection of his entire series (amounting, however, to only 111 specimens in all), in conjunction with the assistance which I have derived from the material which various friends (amongst whom Messrs. Waterhouse, Janson, Douglas, Murray, and Morris Young should be particularly mentioned) have placed in my hands, has enabled me, I trust, to form a tolerably correct estimate as to the actual species which our fauna includes. The examination of 1,137 British specimens from various parts of the country (661 of which were collected by myself, and 247 by

Mr. Waterhouse), has given me a very fair insight into the amount of aberration from local disturbing causes, to which the several representatives are subject; and if, in addition to this, I include the 87 Continental types with which my cabinet is supplied, the specimens which have passed under my own immediate observation, while compiling the present memoir, is no less than 1224."

We are confident that we express the general wish of English Coleopterists, when we say that we hope an author who has such stores of material and knowledge will give his assistance in the revision of some more of the genera of small Coleoptera, which require to be overhauled quite as much as *Atomaria*.

Mr. Murray's 'Monograph of the Genus *Catops*' is another valuable rectification of a difficult genus of Coleoptera. It is not confined to the European species, but includes exotic, and in drawing it up, the author had the assistance of those English and foreign entomologists who have specially studied the genus, so that this paper may be looked upon as the last exposition on the subject, and being written in English will put us in possession of information scattered through many books in various languages. It contains a rapid glance at what has been done by previous authors, first in the European and afterwards in the exotic species; their detailed descriptions, frequently illustrated by outline figures, of all the different species which have been described or have come under the author's notice; and lastly, a short dichotomous table of the charac-

ters of the European species of the genus.

We find a note at page 6, which we cordially endorse and copy below.

"If an author describes a species so loosely that it cannot be recognised from his description, so that subsequent authors misapply or ignore his name, while on their part they give a recognizable description, I cannot see on what principle of justice or propriety we are to be called upon to hold by the unrecognizable name instead of the recognizable, nor why an author (be he living or dead, or great or small) should be allowed to supplement his inadequate description by a reference to the typical specimens in his cabinet from which the descriptions were taken, — a practice now in vogue, against which I take this opportunity to enter my protest."

At page 48, under *C. chrysomeloides*, we find mention of an old fashioned beetle-trap, but it may be new to some of our readers.

"Mr. Bates, of Leicester, has taken hundreds (and supplied me largely) by a simple trap which is very useful for taking some of our rarest *Clavicornes*. He puts three or four rabbits' feet into a soda-water bottle, buries it in a favorable locality, so that the mouth of the bottle is level with the ground, and in a week or ten days the interior of the bottle is swarming with insects, among which great rarities occasionally occur."

We have to express regret that a memoir of so much interest to English Coleopterists should have appeared in the 'Annals' — a magazine which contains so little entomological matter that not one



in fifty of us buys or sees it. It is true that the author makes as much amends as possible by giving away freely copies of this reprint, but as it is not to be bought there are many of our brethren who are unknown to the author, that have little chance of ever seeing it.

We hope Mr. Murray will extend to other genera of beetles an investigation and revision similar to those bestowed upon *Catops*, and thus, with the assistance of coadjutors, hasten the time when we shall be able to tell what species of Coleoptera we have in Britain.

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THE NATURAL HISTORY REVIEW,  
No. 1, 1857, 3s. London:  
Williams & Norgate.

This is one of the best numbers that has appeared, and contains much matter of interest to entomologists. One paper is intitled, "Retrospect of Various Works published during the last year, New Editions, and New Works in progress." The entomological portion, by Mr. Haliday, is especially valuable, for it brings into one view the labours of both continental and British Entomologists during the year 1856, or rather so much of them as has been published. Among the books on Coleoptera reviewed are Redtenbacher's "*Fauna Austriaca*," Fairmaire's "*Faune Entomologique Française*," and the continuation of "Erichson's *Insekten Deutschlands*," by Dr. Schaum and Messrs. Kiesenwetter and Kraatz, and here we find the following remarks. "It would be hard to over-rate the prospective utility of

this (latter) work to the scientific entomologist; and we heartily wish it a steady and uninterrupted progress, and an increasing number of readers. For the convenience of the mere British collector the "*Faune Française*" will probably be found the more suitable, as it will certainly be far the most portable, if both works are continued on the scale commenced respectively. We can scarcely wish it were otherwise, as there is occasion for *both* of these attempts to supply much-felt existing deficiencies; and while each is particularly accommodated to its own circle of readers they may both be serviceable to *all*, as mutually supplementary. We reserve for a future occasion a more particular critical examination of them when further advanced towards their completion respectively; our object now has been only, or chiefly, to bring them under the notice of British entomologists who are discontented with the home-made provisions for the wants of the beetle-collector, and desirous of some stronger food to promote scientific growth. While *they* are only in progress, we recommend, for present use, Redtenbacher's book, as already complete in its own sphere of investigation, and as approved by our private experience, in its application as a guide to the correct and easy determination of the great majority of the British beetles also." This advice may be sound enough for those who can read Latin, German and French, but the greater number of those who are now asking for a Manual of British Beetles understand only their mother-tongue, and they, we think not unreason-

ably, beg those better informed than themselves, to put them on a level with the Lepidopterists. If those gentlemen who have set themselves to the revision of our native Coleoptera would only take up the families in consecutive order and work in concert, the requisite book could be produced in parts, and proceed close in the rear of those of the continental authors, having nearly all the advantages of the collation of their labours which would be available if the publication were postponed until the foreign books were finished.

The "Notices of Serial Publications" extend to forty-four closely printed pages, and embrace works both British and Foreign on all the branches of Natural History. The naturalist may here see what is doing both in Europe and America up almost to the present date, and the editorial notes occasionally given enhance the value of these "Notices." Entomologists and others are thus put in possession of information which they cannot obtain from any other single publication, and this portion of the review deserves all praise.

### EXTRACTS.

#### NOTES ON NOCTUÆ: FROM GUENÉE'S NOCTUELITES.

[Continued from p. 215.]

#### *Orthosidæ.*

This is a family of which the characters are doubtless very slight; it is rather difficult to point out the differences between it and the *Noctuidæ* and the *Ha-*

*denidæ*, and yet we recognise at a glance either the larvæ or perfect insect: indeed the word *orthosiform* is used adjectively to characterise whatever resembles them.

The larvæ are regularly cylindrical, always smooth, elongate, without projection, and with the spots level with the surface; some live on trees, and some on low plants: sometimes even when young they are tree-feeders, and afterwards feed up on low plants: of this the genera *Cerastis* and *Xanthia* furnish us with examples; some of them feed indifferently on either growth when nearly full fed. It may be said that they avoid the light, rather than that they conceal themselves, by retiring under the leaves; some even remain almost exposed. They are, perhaps, of all the *Noctuæ*, most generally diffused, and they abound around us; they are not, however, generally very destructive, with the exception of *Trachæa*.

The perfect insect, as I have said, has an aspect *sui generis*, the palpi generally slender or incumbent, and the reniform stigma, of which the lower portion is almost always dusted with black, are the two most striking characters by which we can recognise the greater number at a glance; but these are not rigorously necessary to characterise an *Orthosia*; the wings are generally disposed at a considerable angle when the insect is at repose. The *Orthosidæ* only fly by night, and are found by day resting on the trunks of trees or palings; the greater number do not appear till the autumn, but some appear in the first days of spring, yet they are

not, at least generally, double-brooded. (Vol. I., pp. 338, 339.)

### *Trachea.*

The extreme shortness of the palpi, the head small and concealed, the woolly clothing of the thorax and abdomen, the legs, &c., approximate this genus to the *Bombyces*, with which Fabricius had placed it; but the tongue, though short, is very distinct, the position of the wings in repose is quite that of the *Noctuæ*, as is also the neurulation, and the larva and chrysalis leave us no room to doubt.

The larva of the only species of *Trachea* has quite the appearance of our *Orthosia*, and the lines are more sharply marked than any other; it feeds in great numbers on fir trees, especially on *Pinus sylvestris*, which it sometimes completely devastates, but, as it always remains quite exposed on the leaves, which are not large enough to cover it, it is open to many risks of destruction, so that M. Treitschke says "hardly one per cent. escapes," but this does not prevent it from causing great ravages in some forests. (Vol. I., p. 339.)

### *Taniocampa.*

The *Taniocampa* are recognised at a glance by their hairy body; the wings being powdery, and as it were mealy; the palpi and tongue short, &c. They have a very Bombyciform appearance, and if we add that the majority of the species have pectinated antennæ, we shall hardly be surprised that ancient authors, deceived by these external characters, had classed

them almost all with the *Bombyces*.

The larvæ are hardly less recognisable; the neatness of their lines, their body long, velvety, most frequently adorned with gay colours, or agreeably variegated, often cause them to be marked; the greater part of them are common, and it is not often that we beat a dozen trees without causing several of them to fall. Hence they would become destructive to our oaks, elms and poplars, on which they feed by preference, if Nature had not imposed a particular obstacle to their multiplication; this obstacle is the facility with which their chrysalides dry up, which only allows about a third of those which assume the chrysalis form to arrive at a perfect state. What is very remarkable is, that this drying up takes place when the insect is almost ready to appear, so that we find the perfect insect entirely formed in these abortive chrysalides. If we add to this precaution of Nature, the ordinary accidents to which all larvæ feeding exposed are liable, birds, Carabidæ, ichneumons, flies, which do not spare these any more than other species, we shall understand why it is that *Noctuæ*, so widely diffused and of which the eggs are hatched at so propitious a season, do not become a pest. Independently of all these enemies, some larvæ of *Taniocampa* have even another enemy in individuals of their own species. In fact those of *cruda* and *miniosa* are cannibals, and when shut up one with another, or with other caterpillars, they attack and devour them with the ferocity which soon finds its punishment in a

disease brought on by this propensity, which speedily causes their death.

All the *Taniocampa* do not live on trees, but those which do not are the exception. *Gothica* and *gracilis* are in this case, but the perfect insects do not differ from the tree-feeding species, and we cannot always base the establishment of groups on this difference of life.

The perfect insects appear generally in early spring, and fly at dusk around the willows, from the blossoms of which they obtain an abundant repast. It sometimes happens that they remain there during the day, and then we can cause them to fall by shaking the branches, but more frequently they retire to the trunks of trees or amongst the herbage; but the best means to obtain them in any quantity is to rear the larvæ, which, as I have said, are very easy to find. The sexes differ little: some species vary excessively, and this has caused the creation of a number of separate names. (Vol. I., pp. 346, 347.)

#### *Anchocelis.*

This genus, very homogenous, is quite as valuable as the other genera of the family, and even better defined, and easily recognised at the first glance. The larvæ all live on low plants, and conceal themselves during the day under the leaves nearest the ground. They are of rather dull colours, marbled or dusted with brown or reddish on a green ground-colour; the anal plate and the plate on the second segment are well marked. It is in this

genus that we find a very curious exception; it is the larva of *lunosa*, which lives concealed under stones like an *Agrotis*, and of which the spots are warty and shiny entirely as in the *Agrotis*, whereas the perfect insect has nothing to distinguish it from the other species of *Anchocelis*. These exceptional manners would furnish a powerful argument to the adversaries of a natural method, if a single fact could invalidate a thousand others, and if we were not here to apply the universal maxim, the exception proves the rule.

In a perfect state the species of this genus are known at once by the pale nervures of the wings and the reniform stigma being contracted, and as it were strangled in the middle. They keep their wings inclined at a considerable angle, and do not differ in their manners from the other *Orthosidæ*. It is in the autumn that they are met with, and often when the season is far advanced; some of the species vary excessively, and this has given rise to the creation of a number of pretended distinct species. (Vol. I., p. 363.)

#### *Cerastis.*

This is another genus recognised at a glance, and it is unnecessary to insist on its characters. The larvæ of *Cerastis* are elongate, cylindrical, but attenuated in front; of a brown or reddish colour, and with the plate of the second segment well marked. They feed on low plants, and concealed as in *Anchocelis*, but only when grown up; when young they prefer the young shoots of trees, and it is not

till after the second or third moult that they descend to the earth.

The perfect insects are hatched in autumn, and often hibernate before copulation. Not unfrequently we find them in early spring concealed in holes or crouching in shrivelled leaves, but only singly. The position of the wings is very different from that of the other *Orthosidæ*. Instead of having the anterior wings inclined as a sharp angle, as in *Anchocelis* or *Orthosia*, they keep them parallel to the object on which they rest, and partly crossed one over the other as in *Agrotis*. If to this we add that the abdomen is so decidedly flattened and even hollowed in the middle, we shall see why it could be impossible to confound the genus *Cerastis* with any other. This last-named character is even found in the females, which are, hence, very difficult to distinguish from the males, and it is only by a little greater fulness of the body and by a slight difference in the ciliation of the antennæ, that we succeed in separating them, and even for that it requires an experienced eye.

In this genus we find numerous varieties very different from the types, and distinct species very close to each other; hence it requires a profound study, and a knowledge of their first states is indispensable. But for that, we should certainly take some varieties of *Vaccinii* and *erythrocephala* for distinct species (as indeed many of us have done); on the other hand, we should not distinguish *spadicea* from the former, nor *Veronica* from the latter. (Vol. I., pp. 377, 378.)

### *Scopelosoma.*

This genus, which many authors have mixed with *Cerastis*, is distinguished by the form and habits of the larvæ, and in the perfect insect by the form of the thorax and the markings on the wings, which are much more oblong and more dentate.

The caterpillar lives, when young, either concealed between the seeds of the elm or inclosed in the young leaves of different shrubs, particularly of the bramble; it fastens the edges of the leaves like the *Cosmia* and some of the *Tortrices*. When it is more fully grown it lives on low plants like all the *Orthosidæ*. This larva is carnivorous, and spares neither other larvæ nor those of its own species when it is shut up with them. (Vol. I., p. 386.)

### *Dasycampa.*

This is the only exception in this and the allied families of a hairy larva. This is also the principal character of the genus, which I created in 1837, and which has been adopted by modern authors. In the perfect state there is very great affinity with *Cerastis*, from which it is only distinguished by the better developed palpi, the crested thorax, and the markings of the wings. The perfect insects have precisely the habits of *Cerastis*, and like them their existence is prolonged far into the winter, and even into the following spring; warm seasons are favourable with us to their multiplication. The larvæ are fond of spinning their cocoons close to one another, and we find

them thus clustered even in nature. (Vol. I., p. 387.)

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E. Newman acknowledges the receipt of 21s. from the Sheffield Entomological Society; 1s. from W. W.; 3s. 8d. from W. H.; all for the widow of the late Mr. Hemmings. He is also requested to state that the collection formed by Mr. Hemmings will be sold by Mr. J. C. Stevens on Friday, March 13, at 1 o'clock, for the benefit of the widow: it consists chiefly of good British Coleoptera and Micro-Lepidoptera, both in fine condition: also a small cabinet.

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**C**LOTH COVERS for BINDING the Volume of 'THE SUBSTITUTE' may be procured of the Publisher at One Shilling each.

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RE-ISSUE OF DOUBLEDAY'S BUTTERFLIES.

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**A** RE-ISSUE of DOUBLEDAY'S GENERA of BUTTERFLIES, or DIURNAL LEPIDOPTERA, in Parts, price 5s. each coloured, or 2s. 6d. each plain, will commence on March 31, to be continued Monthly, and completed in 54 Parts.

\*\*\* It is not intended to reprint this work; and there remain only 106 sets to be re-issued as above.

London: Longman, Brown, Green, Longmans and Roberts.

*On Saturday, April 4th, 1857, will be published No. 27 (the first Number of the New Volume) of*

**THE ENTOMOLOGIST'S WEEKLY INTELLIGENCER. PRICE ONE PENNY.**

To be continued weekly during the summer months (that is, till the end of September), for the purpose of instantaneous transmission, amongst the Entomologists of this country, of all important Entomological information.

Those who make any discoveries or captures of importance are requested to communicate at once to the Editor (Mr. H. T. STAINTON), and all authenticated intelligence received by him prior to the Wednesday will be published in the 'Intelligencer' of the following Saturday.

Those who wish the 'Intelligencer' forwarded by post on the day of publication are requested to transmit 4s. 6d. in postage stamps to E. NEWMAN, 9, Devonshire Street, Bishopsgate Street, N.E., on or before March 20, 1857.

Will be published every Saturday by E. NEWMAN, 9, Devonshire Street, Bishopsgate Street, and by W. KENT and Co., 51, 52, Paternoster Row; and may be had of all Booksellers and Newsmen.

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Printed and published by EDWARD NEWMAN, Printer, of No. 9, Devonshire Street, Bishopsgate Without, London, in the county of Middlesex.—Saturday, March 7, 1857.



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